Latin Historical Phonetics

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Latin Historical Phonetics

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FOREWORD

This book is meant as an aid to students who are dealing with the historical phonetics of the Latin language. It aims to describe the principal and most frequently observed phonetic rules as well as the evolution of the Latin language more broadly. It also provides the most commonly agreed upon interpretations of phonetic phenomena. As such, it makes no claims to originality or exhaustiveness.

The introduction deals with the classification and articulation of Latin phonemes. The first and the second parts are concerned with the vocalic and consonantal systems respectively.

Hélène Perdicoyianni Paleologou

March 22, 2011

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INTRODUCTION

1. VOWELS

In the Republican period, two series of vowels were distinguished, one of them short and the other long, each of these series conteaind five vowels. Long vowels possess a duration which is relatively greater than that of short ones. The diacritical mark for a long vowel is called a *macron*, and consists of a horizontal line above the vowel (*ā*). In contrast, the diacritical mark for a short vowel is called a *breve*, and consists of a downturned arc above the vowel (*ă*).

Timbre

The position of the tongue and the lips during articulation determine the acoustic properties of any particular vowel. Generally, Latin vowels are classified according to their **place of articulation**, their **degree of aperture** as well as the **position of the lips**.

The **place of articulation** refers to where a sound is produced in the vocal tract. In Latin, we can distinguish three categories of vowels:

i) **palatal** (front) vowels: *i*, *e*, whose place of articulation is the hard palate (*palatum*), which is the immobile bony area immediately behind the alveolar ridge;

ii) **post-palatal** or **velar** (back) vowels: *o*, *u*, whose place of articulation is the soft palate (*velum*), which is the mobile fleshy continuation of the hard palate;

iii) an **intermediate** (central) vowel: *a*, which is produced in the position between the palate and velum.

According to Quintilian (I, 4, 8), an intermediate sound was also thought to exist between *i* and *e*, which was produced, for instance, at the end of the word *here* 'yesterday'; another sound was also thought to stand intermediate between *i* and *u*, which was produced in the middle syllable of *optimus*.

By **degree of aperture**, we refer to the size of the opening made by the oral tract.

Latin vowels are produced by varying the aperture of the mouth in the following ways: *a* is the most open (low) vowel, *u* and *i* are the most closed (high), while *e* and *o* have medium (mid) aperture.
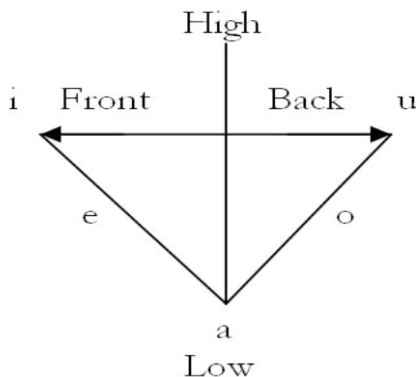
Lip rounding

The vowels *o* and *u* are called *labial* (rounded) vowels because the lips must be rounded in order to produce these vowels. By contrast, *i* and *e* are made with the corners of the lips spread apart.

The length of vowels

As noted above, vowels can be either long or short in length, where long vowels possess a duration that is approximately twice as long as that of short vowels.

The articulation of Latin vowels is based on the following principles with regard to the relative length of vowels:

i) Long vowels are longer than short ones.

ii) Closed vowels are shorter than open vowels. For example, the *i* in *fides*, although short like the *a* in *datus*, is in fact shorter and weaker than the latter.

iii) Vowels in words with more syllables are relatively shorter than the corresponding vowels in words with fewer syllables. The *a* in *daturus* for example is shorter than the *a* in *datur*, and is shorter in *datur* than in *dat*.

iv) The farther a vowel is from the beginning of the word in which it is used, the shorter its articulation becomes. Thus, final syllables will have the shortest vowels relatively. This accounts for *apocope*, which is the deletion of a vowel at the end of a word (p. 30). When a similar deletion occurs within the word, it is called *weakening*[1] (p. 9) or *syncope* (p. 20).

v) A vowel is relatively shorter in closed than in open syllables[2].

2. DIPHTHONGS AND SEMIVOWELS

The term *diphthong* refers to a single syllable which begins with one vowel quality and changes to a second quality, with a smooth movement of the tongue from one articulation to the other. In a diphthong, one of the two vocalic constituents is more prominent than the other.

Latin had the following diphthongs:

ai (later *ae*) [aj] corresponded to Greek αι. Its diphthongal pronunciation is mentioned by Quintilian (I, 7, 18) and later by Terentius Scaurus (*GL*, VII, 16).

au [aw], for the most part, transcribed Greek αυ. Priscian (*GL* II, 38 f., 109) attests to the treatment of this combination as a diphthong.

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[1] What we here call *weakening* is called *Ablaut* in the German tradition of linguistics and *apophonie* in the French.

[2] A syllable that ends in one or more consonants is a *closed syllable*. In contrast, a syllable that ends in a vowel, without a following consonant, is an *open syllable*.

oi (later **oe**) [oj] most often became [u]. Terentius Scaurus (*GL* VII, 17) indicates the diphthongal value of this combination.

eu [ew] occurs in interjections, like *heu* and *heus*, and in Latin proper names borrowed from Greek, such as *Europa, Orpheus*, etc.

ei [ej] occurs only in contracted forms such as *de(h)inc* (Virg. *Aen.* 1, 131), *dein(de)* (Ov. *Met.* 9, 143), or *anteit* (Ov. *Met.* 13, 366).

ou [ow] is confined to the contracted form *prout* (Hor. *Sat.* 2, 6, 67). In Old Latin, *ou* changed to *ū* by the end of the third century B.C.E. However, archaising spellings are sporadically found in inscriptions (ex. *ious* vs. *iudicem*).

Semivowels

The letters *i* and *u* (transcribed respectively by [j] and [w]) sometimes represent semivowels. These possess the phonetic characteristics of a vowel but phonologically behave like consonants.

3. CONSONANTS

Latin consonants fall into two categories *voiced* and *unvoiced* (or *voiceless*). Sounds produced with vibration of the vocal cords are called *voiced* sounds; sounds produced with no such vibration are considered *unvoiced* or *voiceless*.

Unvoiced and voiced plosives

Latin has the following unvoiced plosive sounds are the following:

i) **labial plosives**, which are articulated with both lips: *p*.

ii) **dental** (or **alveovelar**), which are articulated with a primary occlusion by the tip of the tongue pressed against the teeth: *t*.

iii) **velar**, which are articulated with the back of the tongue pressed against the soft palate: *c, k*.

v) **labiovelar**, which are articulated with simultaneous labial and velar constrictions of approximately equal degree: *qu* [k^w]. The 'digraph' *qu* [k^w] is comprised of the sourd [k] and a (nonsyllabic) semivowel *u* [=w] to indicate a labio-velar consonant, that is one pronounced with the lips simultaneously rounded and protruded.

Latin has the following **voiced** plosives: *b*, *d*, *g*, and *gu*. The pronunciation of the first three is close to that of the same voiced sounds in English. It is worth noting that before the dental nasal *n*, *g* would represent a velar nasal sound [^{ŋ}] like that of *ng* in English *hang*. *Gu* represents a single, labiovelar consonant [g^w].

Fricatives

In the archaic period, *f* was probably a bilabial consonant – that is, – but in the classical period, it represents a labio-dental sound, formed by the upper teeth and lower lips (Terent. Maurus VI, 332, 227 K: *Immum superis dentibus adprimens labellum*).

s represents a voiceless alveolar fricative, also know as a **sibilant**.

h

According to the Latin grammarians, *h* simply indicates an aspirant or 'breathing' sound added to the following vowel, and thus employs very slight friction at the glottis. Since it does not function as a real consonant, as it does in English, *h* allows the vowel that precedes it to be elided.

Aspirates

The digraphs <ph>, <th>, <ch> represent aspirated voiceless plosives. They are mainly used in the transcription of Greek words that use the letters *phi (ph)*, *theta (th)*, or *chi (ch)* (Ἀμφίων: *Amphion* [Cicero]; θήκη: *theca* [Cicero]; Ἀχαΐα: *Achaia* [CIL I^2, 626]).

Nasals

This category comprises *m* and *n*. *m* is a bilabial nasal. *n* represents either a dental nasal sound [*n*] or, when it occurs before a labiovelar and sometimes before velar consonants, a velar nasal sound [ŋ].

Liquids

The Latin *r* was a 'trilled' or 'rolled' consonant produced with one articulator held close to another so that the air flow sets up a regular vibration.

l represents a dental or alveolar sound with a lateral articulation[3].

x and ʒ

x and *ʒ* do not properly belong to the Latin consonantal system. *x* was introduced from the Western Greek alphabet to mark the [ks] sound represented by Greek ξ.

ʒ was also introduced from the Greek alphabet to mark the [dz] sound, especially at the beginning of words, ex. *ʒēta*, *ʒētēma*.

4. ACCENTUATION

In the prehistoric period, the accentuation of Latin was a stress accent and fell on the first syllable of the word. This point of view is not unanimously accepted by all scholars dealing with the Latin accentuation system.

In the classical period, however, according to the classical Roman grammarians, Latin stress accent falls:

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[3] The articulation of a consonant is considered 'lateral' when one side of the tongue forms a closure, but the other side allows air to flow freely.

i) on the first syllable, if the word has two syllables (e. g. R*óma*);

ii) on the penultimate syllable, – that is, the second-to-last syllable of a polysyllabic word – if the penultimate syllable is long. The penultimate syllable is long when it contains a long vowel or a diphthong, or is a closed syllable (e.g. *amīcus*, *saeculum*, *applaudo*, *pectus*);

iii) on the antepenult, that is, the third-to-last syllable of a polysyllabic word, in all other cases.

When an enclitic (*-que*, *-ue*, *-ce*, *-ne*, *-met*) is added to a word, it attracts the accent to the preceding syllable, which in the completed compound would be the penultate syllable or penult. This occurs regardless of whether the vowel preceding the enclitic is regularly short or long; e.g. *multáque*, *omniáue*, *tantáne*, *egómet*, *huiúsce* etc.

This means that even in feminine pronouns and adjectives with a short final vowel – such as *aliăue*, *bonăque* – we do not exclude the possibility of an accent that follows the pattern of *aliusque*, *bonusque*, etc. Moreover, in the neuters – such as *turpéue*, *fortéque* – the accent follows the pattern of the masculine and feminine *turpísue*, *fortísque*.

In Late Latin we can observe the following changes in the placement of the accent:

• In words with a short penultimate syllable and in which the antepenultimate syllable was formed by either *i* or *e* in hiatus[4], the accent was placed on the penultimate syllable (e. g. *filiólus*, *muliérem* etc.).

• In words of the type *íntegrum*, *cólubra*, *ténebra*, *tónitrus* the accent is placed on the short penultimate syllable (*intégrum*, *colúbra*, *tenébra*, *tonítrus*).

• In later Vulgar Latin, compound verbs bear the accent on the vowel of the verbal stem. This forms an exception to the

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[4] Hiatus is a syllabic break between two vowels, without an intervening consonant.

principle that a short penultimate syllable must be unaccented, ex: *displácet* vs. *displicet*, *dēcádi* vs. *decidi*, *susténet* vs. *sustinet*.

1 VOWELS

I.1. CHANGES IN THE PHONEMES OF SUBSEQUENT SYLLABLES DUE TO THE SPECIAL PRONUNCIATION OF THE INITIAL SYLLABLE

I.1.A. Vowels in medial syllables

Historical shifts in the vocalization of medial syllables in Latin words resulted from stronger articulation of the first syllable. Long vowels in medial syllables remained unchanged, whereas over time the short vowels underwent two distinct changes. The first was a qualitative change called *weakening* while the second was a quantitative change known as *syncope*.

1. Weakening

Definition

Weakening is defined as a change in the timbre of *short* medial vowels. This change varies according to whether the syllable ends in a vowel (open syllables) or in a consonant (closed syllables).

Short vowels in open medial syllables

In open medial syllables, except before *r* and after *i* and *e*, all short vowels become either *i* or *u*. Whether the vowel becomes *i* or *u* depends on the neighboring phonemes.
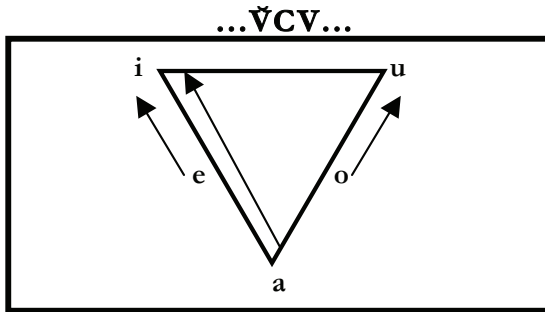
The general rules are:

a) *i* before dental and velars (*t, d, c, g, n*);
i) When not undergoing syncope, *i* remains unchanged.
praevido 'forsee', *evidens* 'visible, clear, evident', *providus* 'foreseeing' cf. *video* 'to see'
excito 'arouse', *suscito* 'stir up' cf. *cito* 'summon'
comminuo 'make small', *imminuo* 'fortify' cf. *minuo* 'make small'
dimico 'fight, contend', *emico* 'spring out' cf. *mico* 'move rapidly to and from'

ii) *e* > *i*
compitum 'cross-roads' cf. *peto* 'seek, ask for'
obsideo 'beset', *praesideo* 'sit before' cf. *sedeo* 'to sit'
reddidi 'I gave back', *tradidi* 'I hand over' cf. *dedi* 'I gave'
dimidius 'divided' cf. *medius* 'middle'
destiti, restiti cf. *steti* 'I stood'
abstineo 'hold back', *sustineo* 'to hold up' cf. *teneo* 'hold'
colligo 'gather together', *deligo* 'pick, pluck' cf. *lego* 'ordain, appoint'
erigo 'set up', *porrigo* 'to strech out' cf. *rego* 'guide, direct'
fluminis, < **flumen-es* gen. of *flumen* 'a flowing, stream'
auspicis, gen. of *auspex* (<*au(i)-spec-s*) 'one who observes the habits of birds for purposes of divination'
stipitis, gen. of *stipes* 'a log, stump'

iii) *a > i* [1]

decido 'cut down', *incido* 'cut into', *cecidi*, *succiduus* 'sinking, failing' cf. *cado* 'fall'

itidem 'in like manner' cf. *ita* 'so, thus, in this manner'

diffiteor 'deny', *profiteor* 'acknowledge openly' cf. *fateor* 'to confess'

restituo 'replace', *substituo* 'put next' cf. *statuo* 'put, stand'

proditus cf. *datus* 'given'

irritus 'void, invalid' cf. *ratus* 'thought'

concino 'sing in chorus', *praecino* 'sing before', *cecini*, *tibicinium* 'playing on the flute' cf. *cano* 'to sing'

abigo 'to drive away', *transigo* 'to drive through', *prodigus* 'prodigal, profuse' cf. *ago* 'drive'

prosilio (with palatal *l*) 'spring up' cf. *salio* 'spring'

pepigi cf. *pango* 'fasten fix, drive in'

tetigi cf. *tango* 'touch'

conficio 'make together', *officio* 'sense of duty, respect', *aedificium* 'building' cf. *facio* 'make'

conticesco 'become silent', *reticeo* 'keep silent' cf. *taceo* 'be silent'.

iv) *o > i*

ilico 'on the spot, in that very place' cf. *locus* (< **in-stlocod*) 'place'

novitas 'newness' < **novo-tas* cf. *novus* 'new' < **novo-s*

hominis cf. *homo* (< **homon-es*) 'man'

v) *u > i*

capitis genitive of *caput* 'head'

corniger cf. *cornu* 'horn'

manica cf. *manus* 'hand'

b) The vowels *a*, *e*, and *o* become *i* before palatal *l* and *u* before velar *l*.

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[1] An exception of *concutio* ('to shake together') < **conquatio* is justified by the influence exerted on the vowel by the preceding labiovelar (**conqʷutio > concutio*).

famulus 'servile' cf. *familia* 'family'
Siculus 'Sicilian' cf. *Sicilia* 'Sicily'
catulus 'a young animal' cf. *Catilina* (nickname meaning originally 'a lover of dog meat')
simulo 'make like' cf. *similis* 'like, similar'
insilio 'leap, spring', *desilio* 'leap down' cf. *salio* 'leap, spring'

However, orginal *i* remains unchanged in all cases, even before velar *l*.
aquila 'an eagle', *mutilus* 'mutilated', *nubilis* 'cloudy', *pestilens* 'pestilential, unhealthy'.

c) Before *w*, vowels undergo a labial rounding by assimilation and become *u*.
abluo 'to wash', *colluo* 'to wash thoroghly' cf. *lauo* 'to wash' (*ab-lu(w)o <*ab-lauo; con-lu(w)o <*col-luo*)
denuo 'anew, again' < *de-nouod cf. *nouus* 'new'
domui, perfect of *domo* 'to sleep', < *doma-wai (cf. *domare*)
monui, perfect of *moneo* 'to remind, warn', < *mone-wai
docui, perfect of *doceo* 'to teach, <*doce-wai
diluuium 'a flood, deluge' < *dis-lauiom

d) Before labials (*b, p, f, m*) the presence of *i* or *u* follows no prescribed rule.
adimo 'take away', *dirimo* 'part, separate', *eximo* 'take away' cf. *emo* 'buy'
adhibeo 'bring one thing to another', *prohibeo* 'hold back' cf. *habeo* 'possess'
contubernalis 'a messmate, comrade' and *contibernalis* cf. *taberna* 'a cottage, hovel'
quodlibet 'withersoever you please' cf. *lubet* 'it pleases'
manibus, dat. abl. pl. of *manus* 'hand'
tribubus, dat. abl. pl. of *tribus* 'a tribe'
but
arcubus dat. abl. pl. of *arcus* 'a bow'
recipero cf. *capio* 'to seize'
surripio 'to take away' cf. *rapio* 'to seize' but *surrupuit* perfect in Plautus and in a legal text dating from 58 B.C.E. (CIL I² 756)
ferimus, *legimus* but *quaesumus* (*quae-s-omos) *possumus* (*pot-s-omos), *volumus* (*vol-o-mos).

*speci*men 'a visible mark, example, model' but *doc*u*mentum* 'example, pattern'.

*auc*i*pis*, gen. of *auc*e*ps* (<*aucep-s) 'a bird-catcher'

*manc*u*pis* (Old Latin) and *manc*i*pis* (Classical Latin) gen. of *manc*e*ps* 'a purchaser'

Remarks

Regarding the forms of the superlatives ending in -*imus*, -*umus* (*opt*i*mus*, *opt*u*mus*, *max*i*mus*, *max*u*mus*), Quintilian remarks that the apophonic vowel represented a middle sound between *i* and *u* (*Inst.* 1, 4, 8: "medius est quidam *i* et *i* litterae sunt: non enim sic *opt*u*mum* dicimus uel *opt*i*mum*"). That *u* was the old written form, whereas the classical *i* was the written form (*ibid.* 1, 7, 21: "iam *opt*i*mus max*i*mus* ut mediam *i* litteram, quae ueteribus *u* fuerat, acciperent, Gai primum Caesaris primum in scriptione traditur factum"). However, we must note that the form *max*u*mus* is unattested.

The evolution of short vowels in open medial syllables, except before *r* and after *i* and *e*, leads us to the following conclusions:

• short vowels are 'raised' as far as possible, either to *i* or to *u*;

• the predominance of *i* in this position shows that it is unconditioned by contiguous phonemes;

• in this position *u* comes from an assimilation to contiguous labials or velars;

• before a labial consonant, Latin hesitated between *i* and *u*, which is demonstrated by the forms of the superlatives ending in –*umus* and -*imus*;

• however, the absence of the form *min*u*mus*, as opposed to *min*i*mus*, as well as the contrast between *leg*i*mus*, *fer*i*mus* and *poss*u*mus*, *uol*u*mus* proves that the timbre of the neighboring vowels has often exerted a dilating influence on the timbre of the vowel of the second syllable. This is further demostrated by the opposition between *speci*men and *doc*u*mentum*.

Before *r*, all **short** medial vowels become *e*.
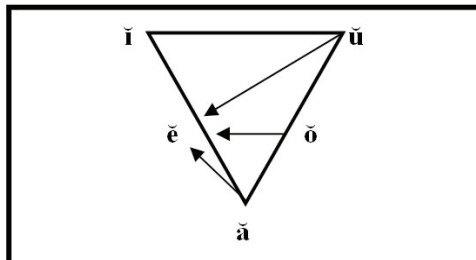
a stops at the intermediate stage *e*:
Numerius cf. *Numasios*
reddere 'give back', *tradere* 'hand over' cf. *dare* 'give'
dedere < *de* + *dare* 'give'
peperi, *reperio* 'get again' cf. *pario* 'bring forth'

e maintains its aperture and timbre:
legere 'ordain, appoint' < **lege-se*
agere 'drive' < **age-se*

o maintains its aperture, but is drawn towards the front by the apical pronunciation of *r*[2]:
onerare 'load, burden' < **onos-ase* (cf. *onus*)
generare 'beget, produce' < **genos-ase* (cf. *genus*)
temperare 'set bounds, keep within limits' < **tempos-ase* (cf. *tempus*)

i before r lowers to *e*:
cineris (<**cinis-es*) gen. of *cinis* 'ashes'
pulueris (< **puluis-es*), gen. of *puluis* 'dust, powder'
facere 'make' < **faci-se*
capere 'seize' < **capi-se*
legerim < **leg-is-i-m*

u is lowered and changed to *e*:
socerum (acc.) 'a father-in-law' < **swekurom*.

1. 3. In hiatus and after *i* and *u*, the weakened vowel becomes *o* before velars and *l*, and becomes *e* before all other consonants. In this position, the weakened vowel is not raised, that is, *o* does not become *u* in words such as *filiolus*, *alueolus*, and both *o*, *e* remained mid vowels (cf. *uariētas*, *ebriētas*, *piētas*, *abiētis*).

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[2] We must note that in all these forms we may also have *e* (with alternating -**e/os* of the suffix of an action noun): **ones-ase*, **genos-ase*, **tempos-ase*.

filiolus 'a little son', *lineola* 'a little limen thread', diminutives of *filius* 'son', *linea* 'a limen thread' in comparison with *porculus* 'a young pig', *herbula* 'a little herbe' diminutives of *porcus* 'a pig', *herba* 'a herb'

uarietas 'variety', *ebrietas* 'drunkenness', *pietas* 'piety' in comparison with *dignitas* 'dignity'

abietis, gen. of *abies* 'the silver fir' in comparison with *limitis*, gen. of *limes* 'threshold'

lienis, gen. of *lien* 'the milt, spleen' in comparison with *pectinis*, gen. of *pecten* 'a comb'.

Grammont (1939, p. 238) interprets these words as cases of "preventive differentiation". Indeed, the speaker allegedly would have avoided pronouncing the stage **uariitas*, **ebriitas*, **piitas*, **abiitis*, because the inevitable contraction to **uarītas*, **ebrītas*, **pītas*, **abītis*, would have caused the loss of a syllable.

Short vowels in closed medial syllables

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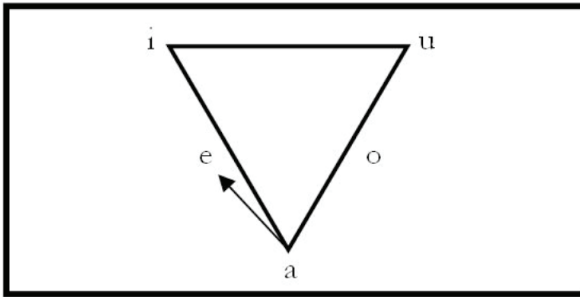
Historically, in closed medial syllables, *a* became *e*. By the end of the 3rd century B.C.E., *o* had become *u* (except before *r*) in these syllables. But when preceded by the vowel or consonant *u*, the orthography or written form of the vowel remained unchanged until the beginning of the Imperial Period in order to avoid the ambiguous written form '*vv*'.

a) *a > e*:

coerceo 'enclose', *exerceo* 'make strong, exercise' cf. *arceo* 'shut in, shut up'

discerpo 'pluck to pieces', *excerpo* 'pick ou') cf. *carpo* 'pluck, select'

ascendo 'ascend', *descendo* 'descend' cf. *scando* 'climb'

detrecto 'decline, refuse', *obtrecto* 'detract' cf. *tracto* 'drag along ; hand, manage'

effectus, *refectus* cf. *factus*

confessus cf. *fateor* 'confess'

fefelli cf. *fallo* 'deceive'

peperci cf. *parco* 'spare'

biennium 'a space of two years' cf. *annus* 'year'

imberbis 'beardless' cf. *barba* 'beard'

ineptus 'unsuitable' cf. *aptus* 'fitted to'

Remarks

u in *insulsus* 'unsalted, insipid' < **in-salsus*, *adultus* 'adult' < **ad-altus* can be explained by the assimilatory influence of a velar *l*.

i in *attingo* 'touch' < **ad-tango*, *effringo* 'break open' < **ec-frango*, is explained by the presence of the *ng* (pronounced *ŋ*).

b) *o > u*

ampulla (dim. of *amp(h)ora*) ('a flask, bottle') < **ampor(e)la* cf. *amp(h)ora* 'jar'

promunturium 'a mountain ridge' cf. *mont-* stem of *mons* 'mountain' (with compensatory lengthening of *o*)

uenustus 'charming, lovely' cf. Old Latin **uenos, -eris*.

As with *e*, the vowel *o* remains the same before *r* in closed medial syllables. This can be explained by the aversion of *r* to high vowels in the Latin of Rome: *enormis* 'very large, enormous', *oportet* 'it must', *extorris* 'exiled'.

c) *i*, *e*, *u* remain:

dedisco 'unlearn', *perdisco* 'learn thoroughly' cf. *disco* 'to learn'

infirmus 'weak' cf. *firmus* 'strong'

consentio 'share in feeling', *dissentio* 'be of different feeling' cf. *sentio* 'to feel'

conseruus 'a fellow slave' cf. *seruus* 'a slave'

effundo 'pour out', *transfundo* 'pour from one vessel into another' cf. *fundo* 'to pour'

recuruus 'bent' cf. *curuus* 'bent'

In conclusion, it can be said that in closed medial syllables *a* and *o* are raised by only one degree, whereas *i*, *e*, *u* remain unchanged.

Analogy
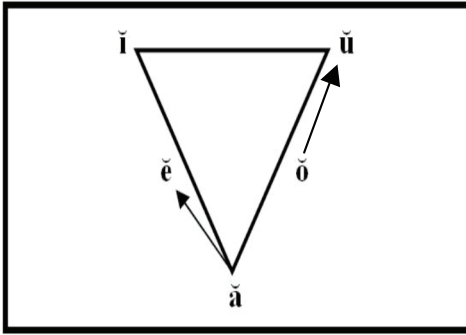
Changes in numerous phonological and morphological forms can be attributed to similarities between these forms and other existing forms which have undergone comparable changes. These are called changes by **analogy**. This is the most commonly accepted interpretation of exceptions to the rules concerning the weakness of short medial vowels.

For example, the medial vowel *o* in *temporis*, *corporis*, *decoris*, as opposed to *operis*, *sceleris*, *deceris* is said to be based on the original nominative form (*tempos* 'time', *corpos* 'body', *decos* 'distinction, honor'). However, the regular weakening persists in *temperi*, the old locative of *tempos*, which subsequently became an adverb in time.

Analogy is also thought to explain the forms *integer* 'whole' and *celeber* 'filled, crowded' instead of **intiger* and **celiber*. The medial vowel of those words is commonly believed to have been

based on the nominative of the feminines and neuters *integra – integrum, celebris –celebre* and the oblique cases *integri –integro, celebris – celebri*. All forms contain the medial vowel and occlusive + *r*.

Certain compound nominal or verbal forms maintain their simple form: *adamo* 'fall in love with' cf. *amo* 'love', *oppando* 'spread' cf. *pando*, *peragro* 'pass through' cf. *ago* 'go'; *separo* 'separate' cf. *paro* 'prepare', *reuoco* 'call again' cf. *uoco* 'call', *dedecus* 'shame, dishonour' cf. *decus* 'honour', *abauus* 'forefather' cf. *auus* 'father'.

Medial diphthongs

The medial diphthongs *ae* [*aj*] and *au* [*aw*] proceeded respectively to *ī* (*aj* >*ei* > *i*) and *ū* (*aw* > *ow* > *ū*). The evolution of *aw* to *ū* can be explained as follows: the first element *a*, weakened by its position, assumed the post-palatal timbre *o* through the influence of the following *u*. The new diphthong *ow* thus created proceeded normally to *ū*.

ceīdi <*kekeidi* perfect of *caedo* 'to cut' (OL. *kaido*)

illīdo 'to strike *or* dash against *or* upon' < *illeido* compound form of *laedo* 'to hurt; to strike' (OL. *laido*)

exīstimo 'to judge a thing according to its value' < *exeistimo* compound form of *aestimo* 'to appraise' (OL. *aistimo*)

conclūdo 'to shut up' < *conklowdo*

excludo 'to shut out, exclude' < *exklewdo*

inclūdo 'to include' < *inklowdo*

occlūdo 'to shut up, close up' < *obklowdo*

reclūdo 'to unclose' *reklowdo*, all compound forms of *claudo* 'to shut'

defrūdo 'to defraud' < *defrowdo* compound form of *fraudo* 'to deceive'

accūs(s)o 'to accuse' < *adkows(s)o* compound form of *caus(s)a* 'cause'

Remark

Pertaesum 'disgusted', instead of *pertīsum*, is a reconstruction (Cic. *Or.* 159; Lucil. 963 ss.).

Other special cases

In certain forms, short medial vowels adopted the timbre of the initial vowel: *egredior* 'go out' cf. *gradior* 'go', *perpetior* 'bear to the end' cf. *patior* 'bear, endure'. The appearance of the vowel *e* in these forms can be additionally justified by the influence of the forms *egressus, perpessus*[3] by analogy.

We must note the irregularity of *u* in *pepuli* and *tetuli*. In these forms, the weakened vowel of the medial syllable before palatal *l* becomes *u*. The primitive form of *pepuli* was **pepulai* and the weakening occurred prior to the change of this diphthong into *ī*.

2. QUANTITATIVE CHANGE: SYNCOPE

Definition

Syncope is the loss of short vowels in the middle of a word. This loss is due to the shortened duration of vowels in certain words during recitation. The vowel remains present in the word, but lingers just below the point of acoustic perception. Most cases of syncope appear in open medial syllables and, more rarely, in closed medial syllables.

Syncope in open medial syllables

1. 1. Unaccented *i* after /w/ in words of three or more syllables disappears by syncope. Therefore we observe the loss of posttonic *ĭ*- in the following words:

claudo 'to limp, halt' < **clau-ĭdo*

---

[3] Cf. *supra* p. 16.

prū̆dens 'foreseeing' < **pro-uĭdens*

auceps 'bird-catcher' < **auĭ-ceps*

raucus 'hoarse' < ** rauĭ-cus*

brū̆ma 'the time of the shortest day of the year' < **breuĭ-ma* (old superlative feminine of *breuis*)

and this also explains the loss of pre-tonic *ĭ*- in the following words:

naufragium 'a shipwreck' < **nauĭ-fragium*

gaudē̆re 'to rejoice' < **gauĭd-ere* (cf. *gauī̆sus* < **gauĭd-to*)

audē̆re 'to dare' < **auĭdere*

Remark

In certain cases, syncope occurs by analogy with forms where the syncopated vowel is accented:

*auĭ-cĭp-um became *aucip-um* by analogy to *auceps* 'bird-catcher'

The persistence of short vowels can also be due to a process of derivative analogy:

in *auĭdus* 'longing for' *ĭ* was preserved due to the analogic influence exerted by the class of adjectives ending in –*ĭdus* (cf. *ar-ĭdus* 'arid', *hum-ĭdus* 'humid' etc).

1. 2. In open penultimate syllables, a short post-tonic vowel disappears after a long vowel + sonant; or diphthong + sonant; or short vowel + two sonants.

corolla 'a little crown' < **corō̆n(ă)la*

ŭllus 'anyone' < **oín(ŏ)-lo-s*

uillum 'a little sup of wine' < **uín(ŏ)lom*

surgo 'to rise' < **súr-r(ĕ)go*

porgo 'to stretch out' < **por-r(ĕ)go*

forceps 'a pair of tongs' < **form(ŏ)-cap-s*

Remark

In certain cases, syncope appears in forms that bore the accent on the lost vowel. This too can be explained by analogical influence.

surgimus < **sur-r(e)gimus* under the influence of *surgo* 'to rise'

forcipem < **form(o)-cipem* under the influence of *forceps* 'a pair of tongs'

Furthermore, analogy exerted an influence on the persistence of short vowels in cases where they would ordinarily be vulnerable to syncope due to their position:

sorĭcis, *ilĭcis*, *filĭcis* kept *ĭ* under the influence of *sorex, ilex, filix.*

1. 3. A word of four or more syllables, in which the last three syllables are short, loses the penultimate vowel.

ampulla 'a flask, bottle' < **ampŏr(ă)-lă*
femella 'a young woman' < **femĭn(ă)-lă*
gemellus 'twin' < **gemĭn(ŏ)-lŏ-s*
porcellus 'a little pig' < **porcĕl(ŏ)-lŏs*
fabella 'a little story' < **fabŭlă-lă*

A word of four or more syllables, in which the first three syllables are short, loses the second or third of these short vowels, whereas the vowel bearing the accent is preserved.

offĭcīna 'a workshop' < **ŏp(ĭ)fĭcīna*
iūniōres 'young' < **iŭu(ĕ)n-ĭ(y)ōres*

Moreover, when the second vowel bears the accent, the third one becomes mute:

satullus 'satisfied' < **sătŭr-(o)-los*
uitellus 'a little calf' < **uĭtĕl(o)-los*

Remarks

1. In forms like *abĭcio* 'throw down' < *abiicio* (= *abjicio* < **ab-jăc-ijo*), *conĭcio* 'throw together' < *coniicio* (= *conjicio* < **con-jăc-ijo*), *obĭcio* 'to throw in the way' < *obiicio* (= *objicio* < **ob-jăc-ijo*), *subĭcio* 'to lie under' < *subiicio* (= *subjicio* < **sub-jĭc-ijo*), *a* becomes *i* and therefore is endowed with the quantitative value of a consonant. Regarding these verbal compounds, Aulus Gellius 4, 17, 8 writes: *Nam verbum ipsum, cui supradictae particulae praepositae sunt, non est 'icio', sed 'iacio' et praeteritum non 'icit' facit, sed 'iecit.' Id ubi compositum est, 'a' littera in 'i' mutatur, sicuti fit in verbis 'insilio' et 'incipio', atque 'i' ita vim consonantis capit, et idcirco ea syllaba productius latiusque paulo pronuntiata priorem syllabam brevem esse non patitur, sed reddit eam positu longam.* "For the simple verb to which the above-mentioned particles are prefixed, is

not *icio*, but *iacio*, and the perfect is not *icit*, but *iecit*. When that word is used in compounds, the letter *a* is changed into *i*, as happens in the verbs *insilio* and *incipio*, and thus the first *i* acquires consonantal force. Accordingly, this syllable, being pronounced a little longer and fuller, does not allow the first syllable to be short, but makes it long by position." (tr. J. C. Rolfe).

2. Doublets such as *caldus* : *calidus* 'warm', *soldus* : *solidus* 'solid', *balneum* : *balineum* 'a bath', *lardum* : *laridum* 'lard', *postus* : *positus* 'position', all of which are derived from words of three or more syllables in which the initial syllable is short, as well as *propter* < **propiter*, where the mute vowel is not preceded by a sonant, can be explained either by a negligent pronunciation due to over-rapid articulation, or by an analogy to adjectives such as *āridus* 'arid', which first became *ārdus* and then was itself reestablished by analogy to *sāpidus* ('savory'), in which the first syllable was short. The doublets *aridus* : *ardus* would therefore have exerted an influence on doublets such as *caldus* : *calidus* 'warm' etc. Moreover, we may explain *propiter*: *propter* 'because of' by the analogy of *subter* : *subiter* 'below, beneath'.

3. In certain cases, the persistence of the medial vowel can be explained either by the need to avoid unpronounceable clusters (ex. *caerimonia* 'ceremony', *paenitet* 'to cause regret') or by etymology. *Breuiter* 'briefly' is justified by the fact that **breuter* would have resulted in **brūter*, which no longer stood in an etymological relationship with *breuis*.

Syncope in closed medial syllables

Syncope of short vowels in closed medial syllables was rare.
sestertius 'a sesterce' < **sēm(ĭ)-es-tertius*
Faustus < **fau(ĕ)s-tos*
iūstus 'just' <**ioustos* < **iou(ĕ)stos*
Derivatives comparable to the preceding ones (*uenustus* 'charming, lovely' < **uenostos*, *modestus* 'modest' < **modestos*) did not experience syncope of the medial vowel because this process would render them into barely recognizable forms such as **uestus* and **mostus*.

I.1.B. Vowels in final syllables

In Latin, the tendency of non-initial syllables to shorten as well as a lack of concern for articulating of the final syllable led to qualitative and quantitative changes to final vowels (Quint. *Inst.* XI, 3, 33; I, 1, 8).

1. Qualitative changes

Short vowels

In open final syllables

$$\ldots \breve{V} \#$$
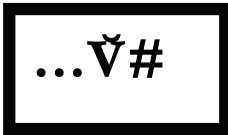
> *e* and *a* remain unchanged :
> *domine* voc. of *dominus* 'master of a house'
> *eque* voc. of *equus* 'horse'
> *genera* acc. pl. of *genus* 'sort'
> *frigora* acc. pl. of *frigus* 'cold'
> *templa* acc. pl. of *templum* 'temple'
>
> *i* becomes *e*:
> *mare* 'sea' < *mari-*
> *facile* 'easy' < *facili-*
> *cape* 'seize, held' < *kapi-*

This change also appears with final *i* in cases where the *i* becomes final due to the loss of final *s*:
> *tribunal* 'tribunal' < *tribunale* < *tribūnāli(s)*
> *militare* 'military' < *milītāri(s)*

Remark

i derived from *ī* persists in doublets, such as *mihi*, *tibi*, *sibi*, *quasi* etc., because the shortening of the final vowel in iambic words occurs after the change of *i* to *e*. However, we do find forms such as *mihe*, *tibe*, *sibe*, *quase* in Livy where *e* probably represents *ē* derived from *ei*.

In *here* 'yesterday' the final *e* derives from an old locative *heri*. The form *heri* (Plaut. *Capt.* 111 etc.) is derived from *heri* (Ter. *Eun.* 169), formed by analogy to *temperi* 'at the right time' and *ruri* 'from the country'.

u becomes *o*:
annoro (CIL V, 896) = *annoru(m)* with loss of *m*
Terebonio (CIL I2, 33) = *Treboniu(s)* with loss of *s*
titulo (CIL III, 7553) = *titulu(s)* 'inscription, title'
ante montem Lemurino infumo (CIL 584, 1.14) = *ante montem Lemurinum infumum* (CIL 584, 1. 16)

In closed final syllables

...CVC(C)#

i remains unchanged:
ensis 'sword' < **ensi-*
agilis 'easily moved' < **agili-*
calix, *-icis* 'a goblet, drinking vessel'

Remarks

i was lost between dental consonants:
mors 'death' <**mortis*
mens 'mind' <**mentis*
pars 'part' <**partis*
ars 'skill, way' <**artis*
pons 'bridge' <**pontis*
mons 'mountain' <**montis*

However, *i* persisted by analogy in the genitive.

u remains unchanged:
*man**u**s* 'hand' < **man**u**-*
*fruct**u**s* 'fruit' < **fruct**u**-*
*red**u**x* 'bringing back' < **red**u**-*

Old short *a* in closed final syllables proceeds to *e*:
*artif**e**x* 'skilled' < **artif**a**ks* (cf. *facio*)
*auc**e**ps* 'bird-catcher' < **auic**a**ps* (cf. *capio*)
*aurif**e**x* 'a goldsmith' < **aurif**a**ks* (cf. *facio*)
*antist**e**s* 'a presiding priest' < **antist**a**ts* (< **antist**e**ss* with simpli-fication of *ss* cf. *status*)
*tĭbĭc**e**n* 'a flute-player' < **tĭbĭc**a**n* (cf. *cano*)
*rēm**e**x* 'a rower' < **rēm**a**gs* (*rēmus* + *ago*)

Remarks

1. *a* in the final syllable of *anas* 'a duck' and in the genitive *anatis* is justified by the assimilating influence of the *a* in the initial syllable.

2. *a* in the final syllable of words of the type *tribunal* 'tribunal', *exemplar* 'transcript', *calcar* 'spur', and *animal* 'animal' have an old *ā* which has been shortened following the change of *a* to *e* in words of the type *artifex* 'skilled'.

3. The poetic term *iubar* 'a beaming light' preserved *a* as an archaism.

4. The persistence of *a*, a vowel of a maximal aperture, in *aureax* 'equestrian' is due to a reinforcement of this vowel by its position in hiatus.

5. The genitive *Caeseris* (CIL IV, 2308; IV, 9492) did not persist for a long time and its rare usage proves, according to Maniet (1975, § 61, 2), "a regular phonetic tendency and the triumph of the old form in words of a special character."

Earlier short *e* in closed final syllables becomes *i* before *t* and *s*.

*fec**i**t* < **fec**e**d* (CIL I², 4) (4th c. B.C.E.)

salutis < **salutes* (CIL I², 450)
ordinis < **ordines*
honoris < **honores*(CIL I² ,612) (193 B.C.E.)
agis, agit, agitis < **ages, aget, agetes*
Apollonis < **Apolones* (CIL I², 37)
Cereris < **Cereres* (CIL I², 973)
Iunonis < **Iunones* (CIL I², 444)
Veneris < **Veneres* (CIL I², 451)

Epigraphic evidence suggests that the change of *e* to *i* is older before *t* than before *s* in nouns (cp. *fecit, honoris*).

Apparent exceptions

The –*s* following *e* in certain words was originally not a simple -*s*, which justifies its persistence:

miles 'soldier' (where final s was not originally simple) < **miless* < **milet-s*

deses 'indolent, lazy' < **desess* < **desed-s*

diues 'rich' < **diuess* < **diuet- s*

Remark

e persists before *n* or *m* (*flumen* 'a flowing, stream', *decem* 'ten', *hiems* 'winter'). Moreover, in *penes e* did become *i* before *s*, but did not do so before *t* in the proclitic *et* nor in the enclitic *-met*.

Old short *o* in closed final syllables became *u*, except in monosyllabic words where *o* is not followed by a nasal, and in polysyllabic words before *r* (eg. *memor* 'mindful', *-oris*; *soror* 'sister', *-oris*; *orator* 'orator', *-oris*; *marmor* 'marble', *-oris*).

filius 'son' < **filios*
dominus 'master of a house' < **domino-*
donum 'present, gift' < **donom*
opus 'work' < **opos*
alius 'another' < **alios*
dederunt < **dederont*
uirum < **virom*

Remarks

1. In closed final syllables the change of earlier short *o* to *u* appears for the first time in epigraphic evidence dating from the beginning of the 3rd century B.C.E. On one inscription dating from the second half of the 3rd century B.C.E., CIL I², 364, we can read *dederunt* next to *coiraueront*. Moreover, we find *uenerunt* (Liv. Andron. *Od.* (cf. Festus, p. 252, 4) next to *nequinont* (*ibid.*, Festus, p. 160, 3).

2. During the Republican period and sometimes in the Imperial period, *o* was written after *u* (*equos* 'horse', *seruos* 'slave', *mortuos* 'dead', *uiuos* 'alive', *biduom* 'two days', *uiuont* 'they live'). According to Quint. *Inst.* I, 7, 26, the persistence of *o* is justified in order to preserve the consonantal character of *u* before a vowel.

3. In the final groups *-ris*, *-ros*, *-lis* and maybe *-los* we note the loss of *i* and *o*. This is explained by the fact that the vowel is assimilated by the sonorant liquid consonant. The final groups *-rs*, *-ls* proceed to *-r(r)*, *-l(l)*. Within the first group, we observe the development of a new syllabic nucleus (**agros > agr̥ > *agᵒr > ager*).

The diphthongs

In final syllables, the diphthongs *ăj*, *ĕj*, *ŏj* become *ī* via *ē*. The diphthong *ŏw* becomes *ū* by way of *ō*.

rosīs < **roseis* < **rosais*

tutudī < **tutudei* < **tutudai*

fecī < **fecei* (CIL I2, 638) < **fecai*

peparī < **peparei* < **peparai* (occured on a funeral urn from the 6th century B.C.E.)

eīs < **eieis* (CIL I², 586) < **eiais*

sibī < **sibē* < **sibei* (CIL I², 581)

mihī < **mihē* < **mihei* (CIL I², 1206)

abīs < **abēs* < ** abeis*

uirī < **uirē* < **uirei* (CIL I², 581)

populī (nom. pl.) < **populei* < **populoi* (cf. *poploe*, Festus, p. 224, 4, written instead of poploi)

illīs < **illeis* < **illois* (cf. *ab oloes = ab illis*, P. Festus, p. 17, 22, where *oloes* may indicate *olois*)

*curr**ū**s* 'chariot' < **kurros* < **kurro**u**s*
*fruct**ū**s* 'fruit' < **frukto**s*** < **frukto**u**s*
*senat**ū**s* 'the Senate' < **senato**s*** < **senato**u**s* (CIL I², 2197)

In light of the above data we can draw the following conclusions:
  • the first element of the diphthong *aj* behaved as if it was in a closed medial syllable and became *e*. The resulting diphthong *ei* then became *ī* as in initial syllables;
  • the first element of the diphthong *oj* changed to *e*, hence the diphthong *ei*, which was later monophthongized as *ī*;
  • the evolution of *ej* to *ī* and *ou* to *ū* occurred through the intermediate stages *ē* and *ō* respectively.

In final syllables, diphthongs endowed with an initial long element *aj* or *oj* but not followed by a consonant become respectively *ae* and *ō*.
Fortunae (dat. sing.) < **Fortunai* (CIL IX, 1543)
Numerio (dat. sing.) < **Numasioi* (CIL I², 3)

From these examples, we can draw the following conclusions concerning the evolution of *aj*, *oj*:
  • the first element of these diphthongs underwent a minor shortening because of their position in the final syllable but remained unchanged long enough to avoid any qualitative change;
  • the second element was either changed (*ai* > *ae*) or lost;
  • *i* approached the point of articulation of *a* and became *e*, whereas *ā* was shortened before a vowel of different timbre.

Remarks

1. In dialects, we observe an alternation between the final diphthongs *ai* and *ā*. On two inscriptions we read both *Mineruai* (CIL I², 364) and *Menerua* (CIL I², 365) for the dative of *Minerua*.

2. The singular genitive ending -*ai*, which became -*ae* by analogy to the dative, did not constitute a diphthong. On the contrary, the ending -*ai* consisted of two separate vowels. For instance, Ennius considers this ending as disyllabic in his hexameter: "*ollī respondit rex Albāi longāi*" (*Ann.* 33) (cf. also Lucr. 1, 112: *animai*; 1, 212:

terrai; Virg. *Aen.* 3, 354: *aulai*; 7, 464: *aquai*). Later *ā* was shortened before *i* and the group *ai* merged into the ordinary diphthong *ai*, *ae*.

2. Quantitative changes

Loss of a short final vowel

In open final syllables (*apocope*)

$$\ldots \; \breve{V} \# \; \ldots$$

   In open final syllables, short vowels were generally lost in certain words. According to Maniet (1975, p.135), *apocope*, or the loss of a vowel in an absolute final syllable seems to be due "to the characteristic shortening of non-initial syllables and, in rapid speech, to the negligent articulation of words or elements, which are not very expressive or became so by lack of use."
   Moreover, *e* had the tendency to be lost notably in neuter nouns ending in -*are*, or -*ale*. In these cases, according to Maniet (1975, p. 135), there must have been cases of absorption, which occured in long words due to the presence of a sonant and a long syllable before the less common vowel sonant *e*.

   ut <*uta
   et <*eti
   post < *poste
   ac < *atque
   nec < *neque
   dein, exin, proin doublets of *deinde* 'thereafter', *exinde* 'thence', *proinde* 'consequently'
   ūn < *ūsne
   nostīn < *nostīne

hic, haec, hoc < **hice, haice, hocce* (< **hod-ce, hace* < **hā̆d-ce, hā̆cce, hunce, hance*) are considered an archaism of the language of chancellery in the Lex of Bantiae, written between 133 and 118 B.C.E.

dīc < *dice (Plaut. *Bac.* 716)

dūc < *duce (Plaut. *Aul.* 452)

fāc < *face (Plaut. *Aul.* 153)

exemplar 'transcript' < *exemplāre (Lucr. II, 124) with shortening of **ā̆**.

tribunal 'tribunal' < *tribunāle (CIL I², 593) with shortening of **ā̆.**

facul (a rapide-speech form) < *facile

em < *eme

lac <*lacte (Plaut. *Bac.* 13; *Men.* 1089; *Mil.* 240 and *Caec.* 220) (with loss of **t**).

Remarks

1. In authors of the classical period, **e** normally remains in the particle *-ne*. However, we find *uiden* instead of *uidēsne* in Virg. *Aen.* 6, 779 and Cic. *Epist.* 9, 22, 3).

2. Compounds of *dico* 'to tell, say', and *duco* 'to lead' are generally apocopated (*dic, duc*). However, in archaic Latin, we find the forms *adduce* (Plaut. *Asin.* 355; Ter. *Phorm.* 309) and *tra(ns)duce* (Ter. *Ad.* 910, 917).

3. In the imperatives *dīc, dūc,* and *fāc*, apocope is probably due to analogy with the athematic imperatives *es, fer.*

4. The form *edīce* is attested by Virgil in a final dactyl: *edice maniplis* (*Aen.* XI, 463).

5. In the vocatives *uir* 'man' and *puer* 'child' <**uire, pure* (Plaut. *Asin.* 382, 891; *Curc.* 75; *Most.* 965, 990, 991), apocope may have been influenced by related nouns ending in *-r*: *pater* 'father', *mulier* 'woman', *mater* 'mother', *frater* 'brother', *soror* 'sister', *uxor* 'spouse'.

6. Short **i** was lost in the third person of verbs where *-t* and *-nt* derive from **-ti* and *-nti*.

In closed final syllables (*syncope*)

$$\ldots \breve{V} C(C) \#$$

In final syllables *i* before the fricative *s* was lost through syncope. Its loss is justified by its shortening in final position and the presence of a long syllable before the final syllable:

sors 'a lot' < **sorss* < ** sorts* < *sortis* (nom. sing.), cf. Plaut. *Cas.* 380, textual variant)

ars 'art' <** arss* <**arts* < **artis* (gen. plur. *arti-um*) (same process of evolution)

lis 'a legal controversy' <**liss* < **lits* < **litis* (gen. plur. *liti-um*) (same process of evolution)

urbs 'city' < **urbis* (gen. pl. *urbi-um*)

atrox 'terrible' < **atrocis* (gen. plur. *atroci-um*)

falx 'sickle' < **falcis* (gen. plur. *falci-um*)

Remarks

1. In certain words, *i* persists after short syllables: *sitis* 'thirst', *ratis* 'raft', *rudis* 'rude', *potis* 'able'.

2. In certain words, *i* persists even when the preceding syllable is long: *dulcis* 'sweet', *turpis* 'ugly, foul', *fortis* 'strong', *uitis* 'a vine', *orbis* 'circle, ring', *uectis* 'lever, crow-bar'. *i* also persists in all nouns ending in *-stis*: *fustis* 'a stick, staff', *uestis* 'clothing', *hostis* 'enemy', *restis* 'a rope, cord'.

i and *o* were lost after the sonant *r*. We cannot explain the precise reason for the loss due to the number of analogical influences, which are attested in preserved doublets: *socerus* (Plaut. *Men.* 957) and *socer* 'father-in-law', *equestris* and *equester* 'equestrian', *acer* 'sharp, cutting' and *acris*.

liber 'free' <**liberr* (cf. *infra* p. 76) <**libers* < **liberos*

celer 'swift, quick' <*celerr* <**celers* < **celeris* (nom. sing.)

Shortening of a long final vowel

In open final syllables

$$\ldots \breve{V}\#$$

In certain cases of an open final syllable a long vowel was shortened in disyllabic words, creating an iamb.

benĕ 'well' < *benē*
malĕ 'badly' < *malē*
citŏ 'quickly' < *citō*
modŏ 'only' < *modō*
herĭ 'yesterday' < *herī* (Plaut. *Capt.* 111; Ter. *Eum.* 169)
nisĭ 'unless' < *nisī* < *nisei*
quasĭ 'as if' < *quasī* < *quasei*
auĕ < *auē*
cauĕ < *cauē*
amă < *amā* (Plaut. *Curc.* 38)

In pre-classical Latin, iambic shortening happened in one of two ways:

i) by a shortening of the final long vowel in a disyllabic word, resulting in an iamb;

ii) by shortening of a non-final long syllable containing a short vowel and preceded by a short initial syllable.

The lengthened and shortened pronunciations were both available to poets in the pre-classical period (Pl. *Aul.* 629: *modŏ* vs. *Capt.* 458: *modō*).

By contrast, syllabic shortening in the classical period is no longer attested, a fact attributable to the loss of intensity experienced by the articulation of the initial syllable. Therefore disyllabic words which were iambics in the pre-classical period are scanned as if they still possessed their original quantity.

In the Augustan period, shortening appears even in final syllables ending in *-o* in non-iambic words (except in the final syllable of the dative and the ablative), *dixero* (Hor. *Sat.* I, 4, 104), *laudo* (Juv.

III, 2), *respondeto* (Martial CIII, 4, 7), *Pollio* (Hor. *Od.* II, 1, 14), *ergo*, *immo*, and *quando*.

In closed final syllables

$$\boxed{\dots \bar{\nabla} \mathbf{C(C)\#}}$$

    Long unstressed final vowels in words of more than one syllable are shortened before a consonant other than *s*.

    sg. 3rd *arăt* < *arāt* (Plaut. *Asin.* 874) but sg. 2nd *arās*
    sg. 3rd *solĕt* < *solēt* (Plaut. *Merc.* 696) but sg. 2nd *solēs*
    sg. 3rd *uelĭt* < *uelīt* (Plaut. *Men.* 52) but sg. 2nd *uelīt*
    Bacchanal 'the place where the festival of Bacchus was held' < *Bacchanāl* (Plaut. *Aul.* 411)
    animăl < *animāl(e)* (with loss of *e*).
    exemplăr < *exemplār(e)* (Lucr. II, 24).

    In iambic words, final long atonic vowels are shortened even before *s* or when they are stressed.
    arbōs cf. *arbŏr* 'tree'
    honōs cf. *honŏr* 'honor'
    addūc, *edūc*, *illīc*, *istīc*, *illūc; tantōn* (In these words the final vowel is stressed).

    In monosyllabic words, long atonic final vowels are shortened only before the phonemes *t* and *m*, which could not sufficiently reinforce the preceding vowel and preserve its quantity. This lack of reinforcement is due to the weakness of the dental and nasal quality of the phonemes *t* and *m*.
    rem cf. *rēs* 'thing'
    flet cf. *flēs*

    This shortening must have taken place after Plautus. Indeed, in his works the long quantity remains unchanged, except in iambic words. In contrast, shortening appears in Terence (*Ad.* 453: *audīret*)

and Ennius (*Ann.* 138: *mandēbat*) where short vowels appear next to long vowels.

I.2. OTHER CHANGES IN LENGTH AND TIMBRE IN NON-FINAL SYLLABLES

I.2.A. Qualitative changes in non-final syllables

1. Assimilation of a vowel with a consonant

> *e* before a guttural nasal *ŋ* becomes *i*.
> *confringo* 'break in pieces' < **confreŋgo* < **confrango*
> *suppingo* 'fasten underneath' < **suppeŋgo* < **subpango*
> *attingo* 'touch' < **atteŋgo* < **adtango*
> *dignus* 'worthy' < **deŋnos* < **degnos* < **decnos*
> *signum* 'sign, mark' < **seŋnom* < **segnom* < **secnom*
> *lignum* 'wood' < ** leŋnom* < **legnom*

According to Maniet's theory (1975, p. 65), *e* assumed a position quite similar to that of *i*: "the point of articulation [of *i*] is along the roof of the mouth, between the point of articulation of *e* and that of the 'guttural' which follows. The point of the tongue is low, at the level of the lower incisors, i.e. near the area where the point of the tongue must be for pronouncing *i*; the tightening of jaws leads to *i*."

Moreover, Maniet (1975, p. 65) justifies *dignus* as follows: "*ŋ* before *n* is articulated between the point of articulation of *e* and that of the dental *n*; the point of the tongue is about at the same level as it is for pronouncing *i* and the jaws are brought much closer. Furthermore, the point of the tongue rises for pronouncing the dental *n*. Therefore, the anticipation of pronunciation finds almost all articulatory movements prepared for *i*. The auditory association with ordinary *i* completes the evolution."

Remarks

1. The persistence of *e* in *iuuencus* 'young' may be either a dialectal characteristic or due to the influence of *iuuen(is),* from which it is derived.

2. The persistence of *e* in *Cupencus* ('priest') can be explained by the fact that it is a Sabine loan word.

3. The appearance of *i* as a prefix or preposition-prefix could be derived from the assimilation of *e(n)* before a guttural (e.g. *incipio* 'to take in hand' or 'to 'begin') or a labial (ex. *imberbis* 'beardless').

o becomes *u* before the guttural nasal *ŋ*.
uŋcus 'hooked, curved' <* *oncos*
but *uŋguis* 'hoof' <* *unguis*

This evolution can be explained by the fact that the point of articulation for *o* is lower than that of *u*. When *o* is being produced, the anticipation triggers a lowering and, by repercussion, also a raising of the back of the dorsum towards the roof of the tongue, to the point of articulation of *u*.

Remark

In *longus* 'long' < **dlongh-*, *o* persisted because of the pre-palatal character of *ll* < *dl* which was simplified to *l* and velarized.

e becomes *o* before *w* or velar *l* followed by a vowel. In these cases, velar phonemes such as *w* and dark *l* preceded by *e* exert a significant influence such that, at the moment when the *e* is being articulated, the organs already are in a post-palatal position, which leads to the *e* becoming *o*.
nouus 'new' < **newos*
oleum 'oil' < **elaiwom*
holus 'any kind of culinary vegetable' < **helus*
*uel- > *uolo* 'to want', *uolebam*

Remarks

1. The persistence of *e* in *gelu* 'frost, icy cold', *celsus* 'upraised, high', *scelus* 'crime, evil deed' etc. is explained either by an analogi-

cal influence   (*gelidus* 'cold' on *gelu*, *uelox* 'swift, quick' on *celox* 'swift, quick' etc.) or by the velar quality of the initial <*c*> and <*g*>, which prevails over the anticipation of the velar. Since *c* and *g* are pre-palatal when followed by *e*, the vowel retains this pre-palatal character and remains *e*.

2. In *leuis* 'light' and *breuis* 'brief', *w* derives from *gʷh* (cf. Gr. ἐλαχύς, βραχύς respectively). We could explain the persistence of *e* by chronology: indeed, the passage from *e* to *o* may have stopped before the complete transformation of *gʷh* to *w*.

Short *e* becomes *o* in open syllables after a consonant group that includes *w*, unless the following syllable contains a pre-palatal vowel.

> *conquo* 'conquer' < **kʷekʷo*
> *socer* 'father-in-law' < **swekuros*
> *soror* 'sister' < **swesor*

This change can be explained by the combined effects of two different factors. On the one hand, there were the consistent position and the very expressive articulatory character of the semivowel *w*, whose articulation involves a strong rounding of the lips. On the other hand, there was a total absence of the expressive articulatory features characteristic of *e*. The tongue, instead of being displaced to the roof of the mouth, so that *e* must be pronounced, remains through inertia in a post-palatal position, at the point of articulation of *o*.

Remarks

In closed syllables, *e* exerts a significant influence on the articulatory muscles so that it can resist before a non-velar consonant.

> *quercus* 'oak', *bellum* 'war' < **duellum*
> *bellus* < **dwenolos*

According to Maniet (1975, p. 67), *queror* 'complain' preserved *e* because of *questus* 'complaint' or *querēla* 'complaint', or *querimōnia* 'complaint', words in which the following syllable contained a pre-palatal vowel.

The origin of *somnus* 'sleep' from **swepnos* allows us to theorize that *e* became *o* under the combined influence of the labials *w* and *p*.

o, whether a 'true' *o* or an *o* which was derived from *e*, became *u* before *l* when the latter was followed by any consonant other than *l*.

*stu**l**tus* 'foolish' cf. *sto**l**idus* 'stupid'
*cu**l**men* 'an upright thing' cf. *co**l**umen* 'summit, ridge'
*uu**l**nus* 'wound' < **uo**l**nus*
*uu**l**t* < **uo**l**t* < **we**l**t(i)*

The appearance of *l* within the same syllable as *o* permitted *l* to exert such a strong attraction that *o* was pushed to a high degree of velarity.
This was not possible within words in which *l* was followed by another *l*. Indeed, because of its palatal trait, *l* could not velarize the preceding vowel.

Remarks

1. If *culmen* is really derived from *columen*, the transformation of *o* into *u* must have been made at a time posterior to syncope.
2. The phenomenon is also posterior to the passage of *l* + *d*, *l* + *n*, or *l* + *s* to *ll*.

*pe**ll**o* 'to strike, knock' < **peldo*
*ue**ll**us* 'fleece' < **welnos*
*ue**ll**e* 'to want' < **welse*

3. When preceded by *u*, *o* became *u* but continues to be written as *o* until the Imperial Period in order to avoid confusions:

*uo**l**t* pronounced *uu**l**t*
*uo**l**nus* pronounced *uu**l**nus*
*uo**l**pes* 'fox' pronounced *uu**l**pes*
*uo**l**tur* 'vulture' pronounced *uu**l**tur*
*uo**l**gus* 'the people' pronounced *uu**l**gus*

An earlier *o* became *u* before *m* or after *n*.
*(h)u**m**erus* 'shoulder' < **omesos*
*hu**m**us* 'ground, earth' < **ghomos*

*nu*merus 'measure' < **no*m- *Numidae* < *Nomades (written in Greek)

*lu*mbus 'the loin' < **lo*ndhwos

*u*mbilicus 'navel' < **o*mbh-

*nu*mmus 'a piece of money' < **no*m(i)mos

This change occurred prior to 600 B.C.E. and can be explained by the fact that the tip of the tongue, which must have a higher position for articulating *m* than for articulating *o*, had to rise up in anticipation at the moment *o* was articulated. In repercussion, the *dorsum* was raised toward the velum. The produced sound was a sort of *u*.

Remarks

1. If *homo* 'man' is derived from the doublet *ghomon, the persistence of the first *o* is justified by the influence of the *o* that follows. This explains the contrast with *humus*.

2. Compounds made with *com-* seem to undergo an analogy with forms in *com-* and *co-*.

3. Regarding *domus* 'home' and words derived from the same root, it is possible, according to Maniet (1975, p. 68), that "the prepalatal non-rounded *d* did not hamper a final change of *o* in the extreme post-palatal *u*, whose articulation presupposes a strong rounding of the lips, at the moment the vowel oscillates between the two timbres."

In an initial syllable *o* became *e* when preceded by *u* and followed by *r* + consonant, *s* + consonant, and *t* + consonant.

*ue*rro 'drag, sweep' < **uo*rro

*ue*rsus 'towards' < **uo*rsus

*ue*rtex 'whirl' < **uo*rtex

*ue*rmis 'worm' < **uo*rmis

*ue*ster 'your' < **uo*ster

*ue*to 'forbid, prohibit' < **uo*to

*ue*id- (> *uidi*) < * *wo*id- (?)

*ue*ic- (> *uicus*) < * *wo*ik- (?)

This passage from *o* to *e* in the initial syllable can also be explained by **differentiation**, which is a phenomenon of reinforce-

ment and conservation, and is opposed to assimilation or disappearance. According to Maniet (1975, p. 79) differentiation is "the phenomenon in which the speaker has the tendency of changing his articulatory position during the emission of two contiguous phonemes or elements of a diphthong when these are partially similar, either by accentuating the difference between them or by developing an intercalated phoneme."

w and *o* have an almost identical articulation so that the speaker might confuse them and articulate only a single phoneme (e.g. **qᵘolo* > *colo* 'cultivate'). Moreover, in the initial syllable, the persistence of the semivowel *w* is due to its implosive quality. But, in certain cases, at the moment the speaker would be about to articulate *o*, he would abruptly retract his tongue to the other side of the roof of the mouth, that is, towards the point of articulation of *e*, which is a vowel with the same degree of opening.

From the middle of the 3ʳᵈ century B.C.E. (Quint. *Inst.* I, 7, 25), alternation of forms appears in both Terence (Phorm. 75: *aduersari*; 242: *aduorsus*; 552: *uostram*) and epigraphical evidence dated from 123-122 B.C.E. (CIL I² 583, 3: *auersum* but l. 30: *aduorsos*, l. 25: *aduorsarium*; 584, 45: *controuersis* but l. 43: *controuorsias*).

2. Assimilation of a vowel with a semivowel

1. The diphthong *aj* became *ae*.
*ae*des 'temple' < **ai*des (CIL I², 581)
*ae*quus 'just' < **ai*quos (CIL I², 581)
*Cae*sar 'Caesar' < **Cai*sar (CIL VI, 353, 921, 1231, 1256, 16707, XI, 3199, 3593, 5973)

This change took place from the beginning of the 2ⁿᵈ century B.C.E. and is explained by the fact that the tongue stops at the intermediate point of articulation of *e*, rather than remaining whether the higher phoneme *j* is articulated. Indeed, *e* represents an intermediate stage between *a* and *j*.

Remarks
1. In the Roman countryside, *ae* had become *e* by Varro's time (116-27 B.C.E.), L. L. VII, 96; V, 97). This change is due to the

inertia by which the first element (*a*) was led by the second (*e*) to the point of its articulation, until *ae* become monophtongized to *e*: *edus* < *(h)aedus*.

2. When followed by *j*, *aj* did not become *ae* because *j* was the first element of a geminate and therefore its point of articulation was linked to that of the second *j*:

maius 'bigger', pronounced *majjus* < *mag-jos*
aio 'to say, tell', pronounced *ajjo* < *ag-jo*

The diphthong *aw* remained unchanged.

This phenomenon appears in literary language. In the speech of the countryside, *aw* similarly did not become *ō* by mutual assimilation of the two elements.

*ō*la (CIL I², 1290; VI, 2962. 3936. 19075. 29983) cf. *au*la 'flute'
*c*ō*lis* (Cat. *Agr.* 35, 2) cf. *c*au*lis* 'the stalk of a plant' (Cat. *Agr.* 33, 4)
*p*ō*llulus* (Cat. *Agr.* 70, 1) cf. *p*au*l(l)ulus* 'very little, very small' (Cat. *Agr.* 10, 2)

This *ō* has a dialectal origin and eventually penetrated into the cultivated society of Rome. Therefore we find:

*l*ō*reola* (Cic. *Att.* 5, 20, 4) cf. *l*au*reola* 'a laurel branch'
*l*ō*tus* cf. *l*au*tus* 'washed; fine, splendid'

This change fuelled by urbanization became widespread and led to a confusion in both pronunciation and writing. Sometimes, the inhabitants of Rome did not know whether the *o* was of ancient origin or was the result of a dialectal monophthongization of *aw*. This confusion is described by Suetonius (*Vesp.* § 22): *Mestrium Florum consularem, admonitus ab eo plaustra potius quam plostra dicenda, postero die Flaurum salutauit.* "When an ex-consul called Mestrius Florus called his attention to the fact that the proper pronunciation was *plaustra* rather than *plostra*, he greeted him next day as *Flaurus*" (tr. J. C. Rolfe).

Hence hypercorrections such as:
austia 'a seaport town in Latium' (CIL I², 2216) for *ō*stia
scauria 'dross, slag of metals' (CIL II, 5181, 53) for *sc*ō*ria*
plaudo 'to clap, strike' for *pl*ō*do*

In Vulgar Latin, we find a few words in which *ō* is written and pronounced instead of *aw* (*cōda* for *cauda* 'the tail of an animal').

Finally, in the Vulgar Latin of the Empire, atonic *aw* becomes *a* when the following syllable contained *u*. In the second century C.E. Flavius Caper (*GL* VII, p. 108, 6) taught that the correct pronunciation was *ascultare* and not *auscultare* 'hear, listen', *Agustus* (CIL II, 4510; IV, 2124; V, 3259; IX, 1365) and not *Augustus*.

> The dipthong *ej* becomes *ē*, then to *ī.*
> *cīuis* 'citizen' < **ceiuis*
> *dīco* 'to say, tell' < **deico*
> *mīsi* <**meisi*
> *sī* 'si' <**sei*
> *diffīdo* 'to mistrust, despair' < **diffeido*

From the first half of the 2nd century B.C.E., the two elements of the diphthong *ej* were progressively brought closer, which led to the pronunciation *ē*. Finally *ē* became *ī*. The intermediate stage *e* has taken place by 186 B.C.E., because we see the word *conprōmesise* (= *comprōmīsisse* < **conprōmeisisse*) in the *Senatus consultus de Bacchanalibus*.

We also find *ī* derived from *ei* in an inscription dating from the year 160 B.C.E. (CIL I², 586). The sound *ē* must have been brought closer to the timbre *ī* than to the original *ē*. Moreover, when followed by a vowel, *ej* became *ē*, due to the loss of the intervocalic *j*.

In contrast with the language of Rome, which preferred the timbre *ī* (long), rural language retained *ē* (Varro *Rust.* 1, 48, 2): *uekos* (CIL I², 388, inscription from Trasacco, at the lake's edge of Fucin) < **weikos*.

> The diphthong *ew* proceeds to *ow*, then to *ū.*
> *dūco* 'to lead' < **douco* < **deuko*
> *ūro* 'to burn' < **euso*

Leucesia appears in Terertianus Scaurus (28, 11 K) a part of *Carmen Saliare*.

e was attracted by the velar character of *w* towards the place of its articulation, which resulted in the dipthong *ow*, which became *ū*. This development occurred during the preliterary period.

Remarks

1. The monosyllables *neu, seu, ceu*, doublets of *neue, seue, ceue*, are derived as the result of apocope. These forms preserved the long quantity of *ē* and avoided assimilation.

2. The interjection *heu* escapes regular rules of development.

3. In *neuter eu* was not a diphtong but a disyllabic group which was pronounced *ne-uter*.

The diphthong *ow* became *ū* before a consonant.

iūmentum 'beast of burden' < *iouxmentom (CIL I², I)

lūcus 'a sacred grove' < *loucos (CIL I², 366)

Lūcina 'the goddess of births' < *Lōcina (CIL I², 359) < *Loucina (CIL I², 360)

nūtrix 'nurse' < *noutrix (CIL I², 45)

This change appears approximately in the middle of the 3rd century B.C.E. and is explained by the fact that the elements of *ow* were fused, resulting in *ǫ* (long), which finally became *ū*.

The language of Rome preserved the timbre *ū*, while the language of thecountryside remained at the stage of *ǫ* (long).

Remark

1. The secondary post-syncope diphthong *ow* is attested either as *ū* (*prūdens* 'foreseeing' < *prouidens, *nūdus* 'naked' < *nowidos < *nogʷodos) or as *ō* (*nōnus* < *nowenos, *fōtus* < *fowitos, *mōtus* < *mowitos).

The diphthong *oj* became *oe*, then mainly *ū*.

ūnus 'one' < *oenos < *oinos (*oino* appears on the funeral stone of L. Cornelius L. F. Scipio, consul in 259 B.C.E. CIL I², 9).

commūnis 'common' < *commoenis < *commoinis (*comoinem* = *communem* in the *Senatus consultus de Bacchanalibus* in 186 B.C.E., CIL I², 581).

cūro 'care for' < *coero (*coerauere*, CIL I², 678) < *coiro (*coiraveront* CIL I², 364 second half of the 3rd century B.C.E.)

lū̆dus 'play, game' < **loedos* (CIL, I², 678) < **loidos* (*loidos* = *ludos* CIL I², 364 (second half of the 3rd century B.C.E.))

ū̆tilis 'useful' < **oetilis* < **oitilis* (*oitile* = *utile* CIL I², 586 (second half of the 2nd century B.C.E.))

mū̆rus 'wall' < **moeros* (Enn. *Ann.* 419) < **moiros* (CIL I², 565).

At first, because of its strong position in initial syllables, *o* attracted more attention and the tongue stopped, by inertia, at the stage of *e*. Then, the process continued until the tongue no longer left the position of *o* at all, which explains the appearance of *oo*. The second *o* was, it seems, shorter than the first and the group resembled *ow*.

The change of *oi* to *oe* must have occurred in the early second century B.C.E. Indeed, we observe that in Plautus' plays, which were written around 190 B.C.E., the pronunciation *ū̆* had already been generalized (*Bacch.* 129: non *omnis aetas, Lu̇de, lu̇do couenit*; *Pseud.* 652, 716. 717 *Surus* instead of *Syrus*, cf. *Pseud.* 636, 637). Moreover, we notice *ū̆* on a tombstone dating from 170 B.C.E. (*ū̆tier* = *ū̆ti* < **oit-*, CIL I², 10).

Remarks

1. In certain words beginning with the labials *p*, *f*, and *m*, the diphthong *oi* remained at the stage of *oe*. This can be explained by preventive dissimilation exerted by the initial labial. This dissimilation occurred at the moment when *j*, having already proceeded to the stage of *e*, was about to labialize to *o* under the influence of the preceding *o* (ex. *poena* 'punishment', *foedus* 'league').

By exception in the words *murus* and *munus*, the labial *m* could not exert such an influence because of its weakness, which is due to its sonority as well as its nasal character. Thereafter, the phonetic evolution of the diphthong was normal: *mū̆rus* 'wall' < **moeros* < **moiros*, *mū̆nus* 'function, duty' < **moenos* < **moinos* etc.

The normal evolution of the diphthong *oi* also appears in words that begin with *p* or *f* and have an *i* in the following syllable. The dilatory action of *i* in conjunction with the assimilatory action of *j* in the diphthong were able to limit the influence of the initial labial (ex. *Pū̆nicus* 'Punic' cf. *Poenus* 'Punic'; *pu̇nire* 'to punish' cf. *poena*).

2. The persistence of the diphthong *oe* is also explained by conservatism. Indeed, from the monophthongization of different diphthongs in everyday language, the Romans sought to retain the use of *oi* in writing in order to create a poetic, traditional and, sometimes, erudite style. (Luc. I, 19, 32: *moenera* instead of *mūnera*; Virg. *Aen.* X, 24: *moerorum* instead of *mūrorum*).

3. In *coepi*, *oe* is posterior to the change of *oe* to *ū*. In Plautus, the group *o-e*, which is composed of two distinct vowels, does not behave like a diphthong (*Cas.* 651, etc).

4. In *co-etus* 'a meeting together', *oe* is derived from a later diphthong *oi*, probably due to the contraction of the prefix *co-* with the word *-itus*.

3. Vowel assimilation

Two consecutive vowels with the same timbre were contracted into a single corresponding long vowel.

*l**ā**trina* 'bath, lavatory' < *la(u)atrina*
*d**ē**mo* 'take away' < **de-emo*
*n**ē**mo* 'nobody' < **ne(h)emo*
*n**ī**l* 'nothing' < **ni(h)il*
*s**ī**s* 'please' < **si(u)is*
*d**ī**tis* 'rich' < **di(u)itis*
*c**ō**pia* 'abundance' < **co-opia*
*c**ō**ram* 'openly, publicly' < **co-oram*
*pr**ō**les* 'offspring' < **pro-oles*
*i**ū**nior* 'younger' < **iuunios*

Remark

In analogical recompositions or posterior formations, the hiatus was retained: e.g. *nihil*, *mihi* etc.

In Old Latin, two consecutive vowels of a different timbre in hiatus were contracted, unless the first one was short and the second one was long. From this contraction there resulted either a

long vowel, the timbre of which was identical with that of the first vowel, or a diphthong, as in the case of the group *o + i.*

   dēbeo 'to owe' < **de(h)abeo*
   dēgo 'to pass time' < **de-ago*
   cōgo 'to bring, drive' < **co-ago*
   cōmo 'to put together' < **co-emo*
   mālo 'to prefer' < **ma(u)olo*
   coetus 'a meeting together' < **co-itus*

   The first vowel attracted the second to its point of articulation and both were then contracted so as to form the corresponding long vowel.

Remarks

   1. In final syllables of the type **ā + ō**, **ā + ēs**   which became **ō**, **ēs**, we cannot determine whether the   evolution is phonetic or analogical.

   2. Analogy prevented contraction in many cases: *coitum* 'a coming together, meeting', represents a verbal form in which the analogy of the simple form *itum* preserved the syllabic noun. *Coetus* was no longer in a close relationship with the verb *itum*. *Coitus* and *coitio* are analogical recompositions.

   3. When a long vowel was preceded by a short vowel, the short one did not undergo contraction with the long one (ex. *coactus, coegi*).

   4. From an older period, hiatus remained within groups of the type *e + o* and *e + a*, which had been derived from *-ejo-, -eja-*, etc. Thus these groups existed after the loss of intervocalic *y*. In recent formations, hiatus also remained within groups of the type *e + ā* (*habeat, ualeat*), which had been derived from **ē + a** (ex. *deamare* < **de + amare*).

4. Metaphony or *Umlaut*

Regressive metaphony
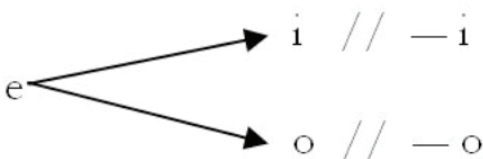
In certain cases, vowels such as *o* (characterized by a high sonority) and *i* (the highest vowel) transform a preceding *e* into *o* and *i* respectively. This transformation can be explained by the wear aperture and sonority of *e*, over which *o* and *i* easily prevailed.

glomus < **glemos*
socors < **secors*
uigil < **uegil*
nemo < **ne-hemo* (cp. *homo*)
nihil < **ne-hilum*

Additionally:

1. In *rutundus*, doublet of *rotundus*, the vowel *u* was assimilated to *o*, which preceded it.

2. Within *Sabastianus* (CIL XI, 3238) instead of *Sebastianus*, *a* seems to have imposed its timbre on the preceding *e*.

Progressive metaphony

In certain cases, a vowel in the first syllable altered a vowel in the following syllable.

farfarus cf. *farferus*

anates (nom. plur. of *anas*, Varro *Rust.* III, 3, 3) and *anatium* (gen. plur. *ibid.* 5, 14; III, II, 1) cf. *anites* (Plaut. *Capt.* 1003).

The vowels *i* and *o* in an initial syllable sometimes imposed their timbre on a following vowel.

uiginti instead of **iugenti*
uicissim instead of **uice-cessim*
oppodum (*Lex agr.* 81) instead of *oppidum*

Remarks

1. Within *triginta*, *quadraginta* etc. *i* is analogous to the *i* in *uiginti*.

2. Progressive metaphony of *o* appears only in popular Latin. Some people may have pronounced the first syllable with greater

stress and ignored the apophonic vowel to a greater degree than others.

I.2.B. Quantitative changes in non final syllables

1. Compensatory lengthening

A short vowel is lengthened as a result of the loss of *s* before a voiced consonant.

sīdo 'to sit down' < **si-zd-o* (< **si-sd-o*, cf. *sed-eo*) (cf. *infra* p. 55, 66)

pōno 'to put' < **pozno* (< **posno, *po-sino*, cf. *sino*)

īdem 'the same' < **isdem* (< *is + dem*)

A short vowel is lengthened before **-*nf*-** and **-*ns*-** because **n** was lost and its voicing was then added to the preceding vowel. In literary language, the vowel remained long even after analogical restoration of the consonant.

cō(n)sul 'consul'; *i(n)fa(n)s* 'infant'

Except for *i*, all short vowels are lengthened in past passive participles when the verbal stem ends in a voiced occlusive, which then became voiceless by assimilation to the following voiceless occlusive (*t*). This lengthening also appears in verbal forms and in nominal derivatives of these participles.

āctus, ptc. of *ago* 'drive'

frāctus, ptc. of *frango* 'break in pieces'

pāctus, ptc..of *pango* 'fasten'

lēctus, ptc. of *lego* 'collect, gather together'

rēctus, ptc. of *rego* 'guide, direct'

tēctus, ptc. of *tego* 'cover'

ēs(s)us, ptc. of *edo* 'eat' < **ed-tos*

nūptus, ptc. of *nubo* 'cover, veil'

lēctor 'reader'

rēctor 'ruler, governor'

Remarks

1. The shortest of vowels, *i* may have undergone compensatory lengthening but not enough to create a real long vowel.

strĭctus, ptc. of stringo 'draw tight together, bind'

scĭssus, ptc. of scindo 'cut, rend'

fĭssus, ptc. of findo 'split, cleave'

2. Phonetic and analogical lengthening preceded weakening. Otherwise, we would have *adēctus* instead of *adāctus* < *adagtos*.

A short vowel (including *i*) is lengthened before the consonant groups **-nct, -nx-**.

cīnctus, ptc. of *cingo* 'surround'

sānctus, ptc. of sancio 'consecrate'

fūnctus, ptc. of fungor 'occupy'

iūnctus, ptc. of iungo 'join, unite'

ūnctus, ptc. of ung(u)o 'anoint, besmear'

In past passive participles, *c* was eliminated after the radical vowel had been lengthened (cf. *quintus* 'fifth' < *quinctus*). However, in order to preserve an etymological link, the *c* was quickly restored afterwards from the present tense forms.

2. Shortening of long vowels

In early Latin, when a long vowel appeared before a sonant followed by a consonant, it was most often shortened. Originally, before *j* and *w* a vowel either was shortened or *j* and *w* were lost (Osthoff's Law).

amantis, flentis are based on stems in *ā* and *ē*. We never find the radical vowel of these stems being used as a long vowel in inscriptions.

nuncupo 'to name' < *noncupo* < *nomi-cap-s*

dius 'divine', in *nudiustertius*, < *di(j) ēws* intermediate stage *di(y) ēws*

diēs may be analogical to *diēm* < *di(j)ēm* < *di(j)ēwm*

A long vowel was shortened before another vowel (*vocalis ante vocalem corripitur*).

fui (Plaut. *Rud.* 901) < *fūi* (Plaut. *Capt.* 555)

rei (Plaut. *Men.* 494) < *rēi* (Plaut. *Asin.* 855).

The first vowel was considered short when the second vowel encroached upon the quality of the first vowel.

Shortening was generalized sometime after the death of Plautus (184 B.C.E.).

Remarks

1. Forms of the type *diēī*, which were compatible with those of the type *dū* or *diē* during the Republic Period, again became standard in the era of Aulus Gellius (9, 4). *ē* is probably due to the influence of the nominative.

2. In the forms of *fio* (except *fit*) without *r*, *ī* preserved its quantity.

3. In the genitives *istīus*, *illīus*, *solīus*, *totīus*, and *unīus* *ī* was usually preserved. However, we can find these forms with a short *i* in Terentius and in prose (Cic. *De orat.* 3, 183).

4. Greek scholarly loan-words, like *āēr*, *Trōius*, *Achelōus*, *Menelāus* preserved the quantity of the vowel in hiatus, except in poetry when a short vowel was required for metrical reasons.

3. Insertion of vowels or semi-vowels

A vowel sound was inserted between an occlusive and *l*, or between a consonant and a semi-vowel, when these groups were followed by a vowel. This phenomenon is called *anaptyxis*.

Herculēs cf. *hercle*

pōculum 'goblet' cf. *pōclum*

facilis 'easy' cf. *faclis*

A vowel developed between an occlusive and a liquid or between a nasal and a consonant. This phenomenon is called *dissociation*. The liquid or nasal vowels date back to the Indo-European period.

The inserted vowel before *r* is normally *e*, a tendency which persisted even after the change of *rl* to *ll*. Moreover, before velar *l*, the inserted vowel is *u*, and it is *i* before *n* and *ll*.

agellus < *agerlos < *agrlos < *agrolos
pōcillum < *pōcllum < *pōclolom
sigillum < *siginlom < *signlom < *signolom
facultās < *facltās < *faclitās
sacer < *sakrs (with *r* < *rs* < *sakros
acer < *akrs (with *r* < *rs* < *akris

2   CONSONANTS

II.1. THE INFLUENCE OF PHONEMES ON CONTIGUOUS PHONEMES

II.1.A. Qualitative changes

1. Assimilation

Definition

Assimilation is the process by which a phoneme changes to match the features of another phoneme that precedes or follows it.

We distinguish between assimilation by the *place of articulation* and by the *manner of articulation*. Assimilation is either *total*, when the assimilated phoneme becomes completely similar to the phoneme that preceded or followed it, or *partial*, when the phoneme contiguous to the one that exerts its influence is only partially affected. Finally, assimilation is divided into *progressive assimilation*, in which the assimilated phoneme follows the assimilating phoneme, and *regressive assimilation*, in which the assimilated phoneme takes precedence over the assimilating phoneme.

Assimilation of consonants

Total Assimilation

Assimilation according to place of articulation (always regressive)

A labial or dental occlusive before a guttural occlusive is completely assimilated.

The groups *bg*, *pg*, *dg*, *tg* become *gg*.
The groups *bc* (*bq*), *pc* (*pq*), *dc* (*dq*), *tc* (*tq*) become *cc* (*cq*).
suggero 'supply, provide' < *sub-gero*
oggero 'proffer' < *ob-gero*
aggrauo 'make heavier' < *ad-grauo*
aggero 'heap up' < *ad-gero*
succido 'fall under' < *sub-cido*
occido 'fall, fall down' < *ob-cido*
accurro 'run to' < *ad-curro*
siccus 'dry') < *sit(i)kos*
ocquinisco 'bend down' < *ob-quinisco*
quicquam 'anything' < *quid-quam*

A dental occlusive before a labial occlusive or a dental nasal before a labial nasal is completely assimilated.
The groups *dp*, *tp* become *pp*.
The group *nm* becomes *mm*.
quippe 'certainly' < *quid-pe*
apparo 'prepare, get ready' < *ad-paro*
immineo 'project over, overhang' < *in-mineo*

The liquid *r* becomes *l* before the liquid *l*.
agellus 'a little field' < *agerlos* <*agrolos*
pellicio 'entice, seduce' < *perlicio* <*perlacio*
satullus 'satisfied' < *satur(e)los*

The dental sibilant *s* becomes *f* before the labial *f*.
differo 'carry in different directions; differ, be different' < *dis-fero*
difficilis 'difficult' < *dis-facilis* (with weakening)

Assimilation according to manner of articulation

A dental or labial occlusive becomes *f* before the spirant *f* (regressive assimilation).
affero 'carry to' < **ad-fero*
officina 'workshop' < **op(i)ficina* (with loss of *i*)
offero 'carry to' < **op-fero*

A dental occlusive becomes *s* before the spirant *s* (regressive assimilation).
pessimus 'very bad, evil' < **ped-somos*
assum 'be present' < **ad-sum*
assequor 'follow after' < **ad-sequor*
possum 'be able' < **pot-sum* (*pot-* following *potest* < *pote est*).
messui < **metsui*

Dental or labial occlusives before the nasal *m*, and dental occlusives before the nasal *n*, are completely assimilated (regressive assimilation).
ammoneo 'admonish' < **ad-moneo*
summus 'highest, uppermost' < **sup-mos*
summoueo 'move away, drive off' < **sub-moueo*
penna 'a feather on an arrow' < **petna*
annuo 'nod' < **ad-nuo*

A dental nasal becomes *r* before the liquid *r* (regressive assimilation).
irrumpo 'break in' < **in-rumpo*
irrigo 'conduct water, diffuse ; water, irrigate' < **in-rigo*
irritus 'void, invalid' < **in-ritus*

A voiced dental occlusive, whether oral or nasal, becomes *l* before the liquid *l* (regressive assimilation).
alloquor 'address' < **ad-loquor*
sella 'a seat, chair' < **sed-la*
colloquium 'talk, conversation' < **con-loquiom*
grallae 'stilts' < **gradlai* (*gradior*)
lapillus 'a little stone' < **lapid(e)los*, diminutive of *lapis*, gen. *lapidis*
homullus 'a little man' < **homon(e)los*, diminutive of *homo*

A voiced dental, oral or nasal, occlusive becomes *l* after *l* (progressive assimilation).

sallo 'to go' < **saldo*
collis 'hill' < **kolnis*
tollo 'lift up' < **tolno*
pello 'strike, knock, beat' < **pelno*

Remarks

1. *Alnus* 'alder', *ulna* 'elbow' and *uolnus* 'a wound' escaped the process of assimilation, because in these words, the elements of the group -*ln*- were previously separated either by a third consonant or by a vowel (*alnus* < **alenos*, *ulna* < **olena*, *uolnus* < **uolenos*).

2. In *caldus, soldus, ualde* from *calidus* 'warm', *solidus* 'solid', *ualide* 'strongly' *i* was lost after the tendency towards assimilation halted.

In Old Latin, the sibilant *s* becomes *l* after *l* (progressive assimilation).

uelle 'to want' < **uel-ʒe* < **uel-se*
collum 'neck' < **kolʒum* < **kolsum*

Remark

There is no original *ls* in either *fulsi* or *mulsi*, perfects of *fulgeo* 'lighten', *mulgeo* 'milk'. These perfects are derived from **fulcsi* < **fulgsi*, *mulcsi* < **mulgsi*.

In Old Latin, the simple sibilant *s* becomes *r* after *r* when not followed by a voiceless consonant (progressive assimilation).

ferre 'bring' < **fer-se*
sacer 'sacred' < **sacers* < **sakros*
verres 'boar' < **uerses*
torreo 'burn, parch' < **torseo*

Remark

In *farsi*, the perfect of *farcio* 'to fill' (< **farcsi*), *sors* 'a lot' (< **sorss* < **sort(i)s*), and *ars* 'art' (< **arss* < **art(i)s*) *r* did not occur before simple *s* until after the tendency towards assimilation halted.

Partial Assimilation

Assimilation according to manner of articulation

Voicing

All voiced occlusive consonants become voiceless before a voiceless consonant (regressive assimilation).

scriptus < **scrib-tos*
actus < **ag-tos*
tectus < **teg-tos*
rectus < **reg-tos*

All voiceless consonants become voiced before a voiced, oral or nasal, occlusive consonant (regressive assimilation).

sēgmentum 'a piece cut off' < **sec-mentom* (cf. *seco*)
prīmus 'first' < **prizmos* < **prismos* (cf. *supra* p. 47; *infra* p. 66)
cānus 'grey, old, aged' < **caznos* < **casnos*
īdem 'the same' < **izdem* < **is-dem*

s becomes voiced before *l* and, later, before *r*. When not followed by a voiceless consonant, *s* also becomes voiced after these phonemes (regressive assimilation).

prēlum 'a wine-press, an olive-press' < **prezlom* < **pres-lom* (cf. *pres-si*)

dīruo 'pull apart, pull to pieces' < **dizruo* < **dis-ruo* (cf. *supra* p. 66)

uēlle 'want' < **uelze* < **uel-se*

fērre 'bring' < **ferʐe* < **fer-se*

Nasality

b becomes *m* before *n* (regressive assimilation).
scamnum 'a bench' < **scab-nom* (cf. *scabellum*)
Samnium 'Samnium' < **Sab-niom*
somnus 'sleep' < **sob-nos* < **sop-nos*

c, g becomes *ŋ* (written *g* in the classical period) before *n* (regressive assimilation).
signum 'sign, mark' < **sec-nom*
dignus 'worthy' < **diŋnos* < **dec-nos*
lignum 'wood' < **liŋnon* < **leg-nom*

When it comes before *m,* *d* is likely to become **n** before its assimilation.

Place of articulation

A nasal, when it comes before an occlusive or constrictive consonant, is assimilated to the consonant it preceded (regressive assimilation).
impiger 'diligent, active' < **in-piger*
quando 'since; when' < **quam-do*
anceps 'two-headed' < **amceps* (pronounced *aŋceps*) < **ambhicaps*

Assimilation of a consonant to vocalic segments

Intervocalic *s*, which is simple in Old Latin, becomes *r* at least within strictly Latin words. This phenomenon is called **rhotacism**.
Examples:
• the forms of all infinitives in *-re* (< **se*) : *ama-re* 'love, like' < **ama-se*
• the future of *esse* 'be' : *ero* < **eso*

• the forms of oblique cases of the third declension such as *mos* 'will, humor', *moris* (< **moses*), *genus* 'kind', *generis* (< **geneses*)

• a great quantity of isolated forms, like *quaero* 'seek' (< **quais-o*), *feriae* 'festivals, holidays' < **fes-iae*), *dirimo* 'part, separate' < **dis-emo* etc.

The rhotacism of intervocalic *s* is explained by the assimilating influence of neighboring vowels. The first stage is the voicing of the phoneme from *s* to *z̧*. This passage is probably the result of the voicing that is required for the clear articulation of certain vowels. In other words, the voicing vibrations came to overlap with the domain of *s* by inertia, in regard to the preceding vowel, and by anticipation, in regard to the following one. As phonemes of a greater aperture than *z̧*, the vowels pursued their development in this direction and this determined the increased aperture of *z̧*. *Z*, a mild consonant with weak articulation, could not resist the vowels' influence and became alveolar *r*. This passage is explained by the fact that the tip of the tongue is first separated from the incisors, then retracts to the alveolar ridge.

The voicing of intervocalic *s* must be very old, but we can not determine the exact date. Cicero (*Ad fam.* 9, 21, 2) cites that L. Papirius Crassus, dictator in 339 B.C.E., was the first in his family to change his name *Papisius* into *Papirius*. Moreover, in the *Digestes* 1, 2, 2, 36, it is mentioned that Appius Claudius Caecus, censor in 312 B.C.E., replaced the spelling *Valesii Fusii* with *Valerii Furii*. These two testimonies prove that rhotacism had taken place at least by the middle of the 4th century B.C.E.

Remark

Certain words seem to have resisted rhotacism: A geminate *ss* *causa* < **caussa* was simplified to *s* after rhotacism; *quaeso* < **quais-so* had a suffix *s*, in contrast to the simple **quaiso*, which did not, and thus became *quaero*.

Some compound words were prevented from undergoing rhotacism by the action of analogies: *nisi* 'if not, unless', *quasi* 'as if, just as', *desinere* 'to leave off, cease, give over, desist', *desuper* 'from above'. Within these words, analogy with the simplex forms is obvious.

In contrast, analogy caused an inverse effect on polysyllabic words: in the oblique cases of words like *arbos* 'tree', *honos* 'honor', and *labos* 'work, labor', a final *s* was replaced by *r*. This passage can be explained by the analogical action that the nouns ending in -*tor*, in which the *r* was primitive, could exert on these words. By contrast, words like *flos* 'flower, blossom', *mos* 'will, humor' etc., preserved the final *s* intact, probably due to their morphology.

The Indo-European occlusive aspirates are represented by voiced consonants between vowels or between vowel and sonant. They became voiced consonants and acquired a great aperture between voiced phonemes. In contrast, in initial position, they became voiceless spirant consonants. The explanation for this is the same as that given for the phenomenon of rhotacism.

nebula 'vapor, fog' < **nebhula*
medius 'middle' < **medhyos*
ueho 'to carry, convey' < **wegh-*
niuis, gen. of *nix* 'snow' < **snigh^w-*

Remark

The voiceless spirant consonant *f* does not regularly appear intervocalically. Its appearance in certain words is explained either by analogy (*fefelli*, perfect of *fallo* 'to deceive', *refero* 'to carry back' cf. *fero* 'to bring'), or by its dialectal origin (*scrofa* 'a breeding sow', *rufus* 'red, ruddy', *uafer* cf. *uaber* 'artfull, sly', *tufer* cf. *tuber* 'a swelling, hump', *sifilare* cf. *sibilare* 'to hiss, whistle').

Assimilation of a consonant into a semi-vowel

The initial sequence *dw* becomes *b.*
bonus 'good' < **duonos*
bene 'well' < **dwene(d)*
bellum 'war' < **duellom*
bis 'twice' < **dwis* cf. *duo* (pronounced *duvo*)
bidens 'having two teeth' < **duidens*

The point of articulation of *d*, a weak consonant in Latin, was close to that of *b* after the rounding of the lips which was necessary for the second element *w* and its shifting by anticipation in the domain of *d*. The closing provoked confusion between *d* and *b*, which resulted in *bw. Since the two phonemes of the sequence *bw were too close to the point of articulation, the second one was eliminated at the moment the group was initially formed.

d was more resistant in initial position than in medial position, where it became mute, perhaps after being assimilated totally in *ww* and then simplified: *suauis* 'sweet, pleasant' < *swadw-is (gr. ἡδύς).

The passage of *du* to *b-* must date to the first half of the 3rd century B.C.E. Actually, Cicero informs us that C. Duelius, consul in 260 B.C.E., was called *Belius* by his contemporaries (*Or.* 153 and Saint Jerome *Adv. Jovin* 1, 46). Moreover, the name of *Duilia*, Duilius' spouse, was pronounced *Bilia*. We should note that at that time the initial group *dw* was preserved artificially in certain words (ex. *duellum*: Plaut. *Asin.* 559, *Truc.* 483 etc).

The groups *-dj-*, *-gj-* become *jj* (written mostly *i*), when they are not dissociated by an anaptytic *i*.

peius 'worst' < *ped-jos (cf. *pessimus* < *ped-somos)
aio 'say, tell' < *ag-jo (cf. *adag-ium*)
maius 'bigger' < *mag-jos

The dental assumes the point of articulation of *j*, whereby *g* perhaps becomes *d* before *j* is totally assimilated.

2. Differentiation

According to Maniet (1975, p. 79), **differentiation** is a phenomenon by which the position of articulation changes during the pronunciation of two contiguous phonemes either by emphasizing the difference between them or by developing an epenthetical phoneme.

1. The old group *sr* becomes *fr* in initial position, and *br* in intervocalic position.

frigus 'cold' < *srigos (cf. gr. ῥῖγος)

sobrinus 'a male cousin on the mother's side' < **swosrinos* (cf. **swosor*, hence *soror*)
funebris 'funereal' < **funesris* (cp. *funestus*)
muliebris 'womanly, feminine' < **muliesris*
cerebrum 'the brain' < **ceresrom* (cf. gr. κέρας cf. κάρα)

As the points of articulation of the voiceless spirant dental -*s* and that of *r* were too close, an assimilation resulting in *rr* was quite possible. In order to avoid this, the tip of the tongue was drawn back to the level of the junction of the superior incisives and the inferior incisives, which produced a voiceless spirant interdental, analogous to *th* (**θ**). *th* was soon replaced by *f*, which was the most similar. It then was voiced, resulting in *b*.

The interior group -*tl*- becomes *cl*.
anclare 'serve with' < **antlare* (Plaut. *Stich.* 273)
suffix -*clo*- (mostly became -*culo*-) < -**tlo*-

The pronunciation of the group -*tl*- required the pressure of the tongue against the alveolar ridge, which would provoke assimilation to *ll*. In order to avoid this, the place of articulation was drawn back to the point of articulation of *c*.

Before or after *r*, the Indo-European sound *dh* becomes *b*.
uerbum 'word' < **wr₀dhom*

glaber 'bald' < **gladhors*

When it reached the spirant stage, *dh* passed to a labial position due to its similarity with the point of articulation of *r*. This transformation finally resulted in the voiced *b*, perhaps after having passed through the intermediate step of *v*.

Remark

The assimilatory tendency appeared first in prepositional compounds before spreading to other forms.

3. Development of an epenthetical phoneme

Within disyllabic groups and between adjacent vowels of different timbre a semi-vowel *j* or *w* is invented.
   pius 'dutiful', pronounced *pi-jus*
   illius, pronounced *illi-jus*
   istius, pronounced *isti-jus*
   ipsius, pronounced *ipsi-jus*
   fuit, pronounced *fu-wit*

i and **u** in hiatus could be altered to become semi-vowels, an infrequent phenomenon in Old and literary Latin. The development of a semi-vocalic element, produced after the vowel and with the same point of articulation, could thereby be avoided.

The interior groups **-ml-**, **-ms-**, **-mt-** become **-mpl-**, **-mps-**, **-mpt-,** through the development of an epenthetic **p**.
   exemplum 'exemplar, model' < **exem-lom* (cf. *emo*)
   sumpsi < **sum-si* (cf. *sumo* 'take')
   dempsi < **dem-si* (cf. *demo* 'take away')
   comptus < **com-tos* (cf. *como* 'put together')
   demptus < **dem-tos* (cf. *demo* 'take away')

At the last phase of the articulation of **m**, the velar opening tends, by anticipation, to close before the articulation is complete. This causes the insertion of an oral labial **p**, whose use before voiceless **t** and **s** was normal. By contrast, before a voiced **l**, we observe a tendency to avoid **b**.

The old interior groups **-dt-**, **-dht- -tt-**, lacking an expressive gemination, become **-*tst-** through the development of an epenthetic **s**.
   *katstos (> *cassus* > *casus* (cf. infra p. 67)) < **kad-tos* (cf. *cado* 'fall down'
   *yutstos (> *iussus*) < **yudh-tos* (cp. *iubeo* 'command', with an analogical **u**, from **youdheyo*)
   *patstos (> *passus*) < **pat-tos* (cf. *pat-ior* 'suffer, undergo')
   essus < **edtos* (cf. *edo* 'eat')
   fissus < **fidtos* (cf. *findo* 'split, cleave')
   plaussus < **plaudtos* (cf. *plaudo* 'clap')

When two similar consonants come in to contact, the first one loses its plosive character, which creates a geminate consonant. The plosion of an occlusive before another occlusive causes the development of a spirant dental element. The sequence *tt*, to which the sequences -*dt*- and -*dht*- were reduced by assimilation, becomes – *tˢt*-. The proto-epenthetical *s* then becomes a normal *s*. In Latin, the sequence -*tst*- later became -*ss*-.

Remark

The assimilatory tendency was also frequent in the development of the groups -*dt*-, -*tl*-, and in prepositional compounds, such as *attraho* etc.

4. Metathesis

Definition

Metathesis is the phenomenon by which the order of contiguous phonemes changes in order to facilitate pronunciation.

The old intervocalic group -*ps*- had the tendency to invert to -*sp*- by metathesis.

uespa 'wasp' < **wopsa* (cf. *wafsa* passing through **wospa* with differentiation of *wo*- to *we*)

crispus 'curly' < **kripsos*

Between vowels the group -*ps*- was partly eliminated by metathesis, but verbal forms like *lapsus*, *scripsi*, *obsecro* 'beseech earnestly' etc. were not affected by this rule. In these forms, -*ps*- was protected by analogy.

Remark

At a later date, assimilation and differentiation were able to influence the group *-ps-*, which explains the appearance of the form *isse* (CIL IV, 148 etc.) and *ixe* (Suet. *Aug.* 88) instead of *ipse*.

When preceded by a consonant and followed by a dental within an initial syllable, the group *-ri-* inverted to *-er-*. According to a generally accepted theory, *i* became *e* before *r*.

ter 'three times' < **tris* (passing through the stage **ters*, *terr*)

tertius 'third' < **trityos*

certus 'certain' < **kritos*

testis 'a witness' < **tri-stis* (passing through the stage **terstis* before finally losing the *r*)

testamentum 'testament' < **tristamentom* (passing through the stage **terstamentom* before finally losing the *r*)

When followed by a dental, the order of the groups *-tri-* was modified. Before all other consonants, the phenomenon of anticipation should have abruptly modified the production of *r*. This explains the formation of *tribus*, *triquetrum*, etc.

Maniet (1975, p. 88) proposes another explanation: "*r* would have absorbed *i*, the weakest vowel due to its minimal aperture, and a vowel with a timbre *e* would have developed so that a regular Latin syllable would be formed."

II.1.B. Quantitative changes

1. The disappearance of voiced phonemes

Disappearance of voiced phonemes in contact by dissimilation

w disappears before *o* and *u* except in absolute initial syllables.

coquo 'cook' < **kʷokʷo (< *pekʷo)* (cf. *infra* p. 69)
colo 'cultivate' < **kʷolo*
deus 'god' < **deiwos* (CIL, I², 4)
deorsum 'downwards' < **deuorsum*
eculeus 'a little horse' < **equuleus* (**ekʷoleos*)
locutus < **loquutos*
secutus < **sequutos*

The loss of **w** before **u** is explained by the similarity between the two phonemes and must have taken place at the beginning of the 2nd century B.C.E.

However, the preservation of **w** in certain cases permitted the recomposition of numerous forms. For example, the forms *dei, deo* etc. would have been reformulated following the nominative deus < **deiwos*. In *paruus* 'little, small', *flauus* 'golden-yellow', *auus* 'grandfather', *coruus* 'raven', **u** was reconstructed under the influence of the oblique cases *parui, paruo, paruorum, paruis* etc.

When followed by a vowel, **w** disappears after a labial consonant, (otherwise, **w** became a vocalized **u**).
fio 'become' < **bhwijo*
amabo 'please' < **amabhwo* (with **b** between two vowels)
bellum 'war' < **bwellom* < **duellom*

Disappearance by increased aperture

Earlier **j** disappears between vowels.
tres 'three' < **trejes*
moneo 'admonish' < **monejo*

The aperture of **j**, a consonant already pronounced only slightly, was favored by the neighboring vowels, thereby increasing the distance between the tongue and the front of the palate. Therefore, the articulation was finally completely neglected. This phenomenon took place in the prehistoric period.

Remark

The intervocalic *j* in classical Latin derives from various groups: from -*gj*- (*maius, aio*) or from -*dj*- (*peius*). The pronunciation of these words was as follows as: *majjus, ajjo, pejjus*. The phonetic written form left several traces in inscriptions (*cuiius, eiius, maiiorem* CIL II, 1964; *maiiestati* CIL XIII, 3672 etc.) and in literary texts in archaic Latin (Plaut. *Merc.* 469: *aiiunt*).

w had the tendency to disappear between two vowels of the same timbre.

latrina 'bath, lavatory' < **lauatrina*
labrum 'basin, tub' < **lauabrum*
delerunt < **deleuerunt*
oblitus < **obliuitus*
sis 'please' <**si-uis*
ditis <**diuitis*
prorsus 'straight-forward' < **prouorsos*
introrsum 'inwards' < **introuorsom*
retrorsum 'backwards' <**retrouorsom*

w, a labial semi-vowel, was dropped when it appeared between neighboring vowels due to their identical character.

Remark

We should note cases of analogy: *amarunt* < **amauerunt* following *delerunt*; *obliuiscor* cf. *obliscor*; *diuitis* was reconstructed following *diues* etc.

The dental nasal *n* disappears before *s* and *f*.
cosol (CIL I², 8) <**consol*
cosentiont (CIL I², 9) <**consentiont*
quoties <**quotiens*
scies (CIL I², 366) <**sciens*
dominos < **dominons*
ouis < **owins*
libes (CIL I², IV, 882; X, 1409) < **libens*
Cresces (CIL IV, 4100. 4353. 4356; IX, 1209) < **Crescens*
iferi (CIL I², VI, 19873) < **inferi*

cofeci (CIL I², 560) < **confecit*

The opening of *n*, a nasal consonant, was favored more before the sibilants *s* and *f* and after vowels, which are phonemes of great aperture. This opening provoked the loss of support for the tip of the tongue, and therefore *n* stopped being articulated.

This phenomenon took place in the archaic period (cf. *cosol*). In the classical period, we observe the tendency to restore *n* before *f* in some words for etymological reasons. However, Cicero continued to use the written forms *Hortesia* instead of *Hortensia*, *foresia* instead of *forensia*, *Megalesia* instead of *Megalensia* etc.

s disappeared before a voiced consonant, except in the old groups *—sr-*, *-sg-*.

idem 'the same' < **isdem* (cf. *supra* p. 47)
canus 'grey ; old, aged' < **casnos* (cp. *cas-cus*)
primus 'first' < **prismos*
diruo 'to pull to pieces, demolish' < **dis-ruo*
digero 'to carry apart in different directions, separate' < **dis-gero*

The voicing of *s* and its subsequent weakening in *z* were normal between a vowel and a voiced consonant. The loss of its character as *s* as well as its point of articulation on the tongue caused the emission of a voiced breath (e.g. *h*), which assumed the point of articulation of the following consonant. The phoneme soon disappeared after compensatory lengthening of the preceding vowel.

In the old group *-sg-*, *s* first became voiced between a vowel and a voiced consonant. It was then transformed into a voiced *h*, which had by anticipation the same point of articulation as *g*; it was therefore pronounced like a spirant *g*. Since the articulation of *g* was close to that of post-palatal *r*, the tongue transformed *r* into an alveolar *r* (**mezgo* < **mergo* 'to dip').

Disappearance by simplification or lengthening

A geminated occlusive was simplified after a long vowel (degemination).

sedulo 'busily, zealously' < **sed-dolod*
secubo 'lie alone' < **sec-cubo* (< **sed-cubo*)
separo 'separate' < **sep-paro* (< **sed-paro*)
praeco 'a public crier, herald' < **praecco* (**praetco* < **praed(i)co*)
gluma 'husk' < **glumma* (**gleubhma*)

The articulation of the long vowel and of the implosive consonant within the following syllable required a special effort on the part of the speaker. By inertia, speakers tended to reject the implosive consonant and articulated only the plosive phase of the geminated consonants.

Remarks

1. In certain words, the preservation of the written forms of the geminate *ll* indicates the palatalized pronunciation of the simple consonant *l* (*mille* cf. *milia*, *uilla* cf. *ilicus*). The pronunciation of *ll* was palatalized like *l* before *i*.
2. The written form *ss* after a long vowel was preserved until the beginning of the Empire: *cassus*, etc. The *ss* of infinitives such as *amasse* is analogical to the corresponding doublets *amauisse* etc.

Within groups of three or more consonants, including geminates, before or after a consonant or a semi-vowel, the last consonant of the implosive group usually disappeared.
sarmentum 'twigs, small branches' < **sarpmentom* (cp. *sarpio*)
tormentum 'windlass; rack' < **torqʷ-mentom* (cp. *torqueo*)
quintus 'fifth' < **quinctus*
indultum < **indulgtum* (cp. *indulgeo* 'to be patient, to indulge')
dispicio 'see clearly' < **dis-spicio*
causa 'cause' < **caussa* (= *cawssa*)

Remarks

1. Analogical reconstruction: *superstes* 'present; surviving' (CIL XIII, 1981. 2000: *supestes*), *quinctus*, *uinctus*, etc.
2. The written form *caussa* was preserved until the beginning of the Empire.

This phonetic evolution did not occur:

a) in the groups *-rps-* (*carpsi*), *-rpt-* (*sarptus*), *-lpt-* (*scalptus*), *-mpt-* (*sumptus*), *-mps-* (*sumpsi*), *-ncs-* (with **s** not followed by a voiced consonant) (e.g. *anxius* (< **ancsius*).

In the groups *-rps-*, *-rpt-*, *-lpt-*, and *-mps-*, the preservation of **p** is explained by its having a more advantageous position than **c**, which disappeared between the same consonants (ex. *sartus* < **sarctos*, *fultus* < **fulctos*, *ultus* < **ulctos*, etc.). Moreover, in the groups *-mps-*, *-mpt-*, and *-ncs-*, **p** and **c** were preserved because they required minimal effort.

b) if it concerned simple **s** (before a voiceless consonant or in a final position) and **s**, either in the older or in the more recent group *-rss-*, in which case the preceding consonant is most often dropped.

testis 'witness' < **tesstis* (< **terstis* 'qui tertius stat')

tostus < **torstos* (cp. *torreo* 'to burn, parch')

fals 'sickle' < **falx*

mers 'merchandise, goods' < **merx*

ars 'fortress, citadel' < **arx*

cals 'heel' < **calx*

arsi < **arssi* (< **ardsi* , cp. *ardeo* 'to burn')

Analogical reconstructions: *abstuli*, *sextus* 'sixth' cf. *Sestius*, *falx* (*merx*; *uorsus*, *prorsus* cf. *prosa*).

In groups of three or more consonants, an occlusive that precedes an **s** which in turn precedes a voiced consonant usually disappeared before the eventual loss of the **s**.

ala 'wing' < **azla* < **aksla* (cp. *axilla*)

iumentum 'beast of burden' < **jouzmentom* < **iouxmentom* (CIL I², 1: *youksmentom*)

II.2. THE INFLUENCE OF PHONEMES ON DISCONTIGUOUS PHONEMES

II.2.A. Consonantal assimilation

In some words, a labial or labiovelar consonant can affect either a preceding labial or a following labiovelar.

bibo 'drink' < **pibo*
barba 'beard' instead of **farba* < **bhardha*
prope 'near' < **prokᵂe*
quinque 'five' < **quenque* < **penkᵂe*
coquo 'cook' < ** kᵂokᵂo* < **pekᵂo* (cf. *supra* 64)

In *bibo* and *barba*, the voiced character of ***b*** was introduced by an anticipation of the glottal vibrations on voiceless ***p*** and ***f***, which had the same point of articulation. In **farba*, ***f*** (derived from **bh*) may become ***u*** under the influence of ***u*** coming from ***dh*** after ***r*** and both ***u***'s then became spontaneously ***b***: **bhardha* > *farua* > *uarua* > *barba*.

In **penkᵂe* and **pekᵂo*, ***p*** may first have become ***pw***, after which it was influenced by the labiovelar.

II.2.B. Dissimilation

Definition

Dissimilation is a phenomenon by which a phoneme is transformed or disappears when it is close to another phoneme that has a similar place of articulation.

Dissimilation can be due to phonologocal context or to social and psychological factors.

In Latin, the consonants most likely to be dissimilated are liquids and nasals.

One plosive preceded by another can cause dissimilation of a similar preceding intervocalic consonant. The labial nasal *m* becomes an oral labial, voiced between a vowel and a sonant.

hibernus 'wintry' < *gheibernos* < *gheibrinos* < *gheimrinos*

Moreover, a nasal can cause dissimilation of an initial nasal. The labial nasal *m* becomes voiceless in initial syllables. The passage from *m* to the continuous voiceless *f* is explained by its continuous character.

formica 'ant' < *mormica*
formido 'dread, terror' < *mormido*

A geminate is degeminated when the following syllable, carrying the accent, contained a geminate.

omitto 'let go, let fall' < *ommitto* (< *ob-mitto*)
ofella 'a bit, morsel' < *offella* (cf. *offa*)
sacellus 'a small sac' < *saccellus* (cp. *saccus*)
disertus 'eloquent, expressive' < *dissertus* (perfect passive participle of *dissero*)

Remark

The degemination was also extended to words in which the following syllable contained a stressed long vowel:

canalis 'waterpipe' < *cannalis* (cf. *canna*)
Argiletum 'Argiletum' < *Argilletum* (cf. *argilla*)

Analogical reconstructions:
gallina 'hen' instead of *galina* by analogy with *gallus* 'a cock'
serratus 'serrated' instead of *seratus* by analogy with *serra* 'a saw'
innoxius 'harmless' by analogy with *innocuus* 'innoxious, harmless'
affectus instead of *afectus* by analogy with *afficio* 'influence'

When two similar phonemes occupy the same position in their respective syllables, the second one has the tendency to cause dissimilation of the first, unless the latter is in common use.

In the two words *caeluleus* and *Palilia* the first *l* becomes *r*. This passage is explained by the light detachment of the palate, as

both phonemes have the same articulatory position. Moreover, in *medidies*, the first *d* was dissimilated into *r*.

    caeruleus 'blue' < *caeluleus* (cf. *caelum*)
    Parilia 'Parilia' < *Palilia*
    meridies 'midday' < *medidies* (*medius + dies*)

    In the perfect tenses with reduplication (*scisccidi*, *spospondi*, *stesti*), the dissimilation of the second *s* is explained by its weak position within the syllable.

    scicidi, spopondi, steti, perfects of *scindo* 'cut, rend', *spondeo* 'pledge oneself to, promise solemnly', *sto* 'stand', cf. *scisccidi, *spospondi*, *stesti*.

    By contrast, the loss of *r* in *praestrigiae* is justified by the psychological factor of the speaker who considered the prefix *prae-* as an element in common use. In this prefix, *r* was more favored by the locutor than *r* in *-stringiae* (from *stringo*), which was less common and in such a position that it could not be dissimilated in *l*. Its loss is due to its weak position.

    praestigiae 'deception' cf. *praestrigiae* (Cic. De *Nat. Deorum* 3, 73), cf. *praestrigiator* 'a juggler' (Plaut. *Poen.* 1125 reading of AB) and cf. *praestrigiatrix* ('deceitful') (Plaut. *Aul.* 630)

    Preventive dissimilation stops the application of rules because the resulting phoneme would be similar to another that is in close proximity to it within the word. This would evoke dissimilation of the phonemes.

    Sometimes, preventive dissimilation cancels rhotacism (*s* to *r*), when another *r* was formed within the same word: *caesaries* 'hair, a head of hair', *miser* 'miserable, unhappy', *Pisaurum* 'Pisaurum'.

    Moreover, when a word contained two similar occlusive consonants separated by a spirant, the plosive disappeared:

    posco 'request' < *possco* < *porsco* < *pork-sko* (present of the verbal stem *prec/proc* of *precor*);

    disco 'learn, know' < *dic(c)sco* < *ditcsco* < *didcsco* < *di-dc-sco* (*dc* being the zero degree of the stem *doc* from *doceo*).

    Preventive dissimilation hindered the use of a formative element containing *r* or *l* within a word the root of which already contained this phoneme. These words are generally formed by means of the suffixes *-alis, -aris*, which have the same meaning.

    auxiliaris 'auxiliary'

consularis 'consular'
familiaris 'familiar, common'
lunaris 'lunar'
militaris 'military'
puellaris 'of a girl, girlish'
singularis 'single, individual'
stellaris 'starry'
cf. *aequalis* 'equal'
dotalis 'belonging to a dowry'
hospitalis 'relating to a guest'
mortalis 'mortal'
natalis 'natal'
navalis 'naval'
regalis 'regal'
uenalis 'on sale, to be sold'

calcar 'spur'
exemplar 'exemplar, model'
lacunar 'a panelled ceiling'
puluinar 'a couch covered with cushions for the images of the gods at the Lectisternium'
cf. *animal* 'animal'
ceruical 'a cushion for the head, a pillow'
tribunal 'tribunal'
uectigal 'revenue'

Remarks

1. In words such as *floralis* 'flowery', *lateralis* 'lateral', *liberalis* 'liberal', *pluralis* 'plural', the stem of which contains both *r* and *l*, the form of the suffix was formed in such a way that a succession of two *l*s or *r*s was avoided within the same word.

2. The preservation of the suffix *-alis* in spite of a preceding *l* and without an intervocalic *r* in *glacialis* 'icy' and *letalis* 'mortal, fatal' is due to the analogical influence of *brumalis* 'relating to the shortest day', *hiemalis* 'wintry', *niualis* 'snowy', and *mortalis* 'mortal'.

3. In certain words formed by means of the suffix *-alis*, analogy was stronger than dissimilation. Therefore *Vulcanalia* was formed after the pattern of *Neptunalia*, *Consualia*, *Saturnalia*, and

(*flamen*) *Palatualis* after the pattern (*flamen*) *Cerialis*, *Pomonalis*, *Portunalis*.

II.2.C. Haplology

Haplology (syllabic collapse) is the phenomenon by which we pronounce only once two syllables containing at least one phoneme in common and located near each other. This phenomenon can be considered an aspect of dissimilation.

    antestari 'call as a witness' < *ante* + *testari*
    arcubii 'qui excubabant in arce' < *arci* + *cubii*
    consuetudo 'usage, habit' < **consue/ti/tudo*
    honestas 'honesty' < **hones/ti/tas*
    fastidium 'loathing' < *fasti* + *tidium* (< *taedium*)
    portorium 'customs' < **por/ti/torium*
    occlusti < **occlu/si/sti*
    scripsti < **scrip/si/sti*
    semodius 'a half-modius' < *semi* + *modius*

II.2.D. Metathesis

Metathesis can also involve the switching of one or two discontiguous phoneme(s) within a word or a group of words. Metathesis is due to either analogy or the need to make a word easier to pronounce.

Like dissimilation, metathesis mainly affects liquids and is limited to popular Latin.

We distinguish two sorts of metathesis, *simple* and *double*. *Simple* (*unilateral*) metathesis consists in the transferring of a consonant from one syllabic segment to another.

co(u)acla for *cloaca* 'sewer, drain'

prancatium (CIL VI, 10154) for *pancratium* 'a gymnastic contest, including both boxing and wrestling'. *Prancatius* (CIL VI, 9994. 32700) and *Pancratius* (Gregory of Tours, *Glor. Mart.* 38. 82)

displicina for *disciplina* 'discipline'

lerigio for *religio* 'religion'

In contrast, *double* (*bilateral*, or *respective*) metathesis concerns the inversion of two discontiguous consonants.

clustrum (CIL IX, 4957. 4970. 4976) for *crust(u)lum* 'a little cake'
plerum for *prelum* 'a wine-press, an olive-press'
leriquus, *leriquiae*, *lerigio* for *reliquus* 'left behind, remaining', *reliquiae* 'remains', *religio* 'scrupulousness; sanctity'

II.3. FINAL CONSONANT

II.3.A. Quantitative changes

1. Disappearance

Final *s*, which was originally simple, disappears after a short vowel and before a word with an initial consonant position. The loss of *s* took place during the pre-classical period. However, perhaps by analogy to cases in which *s* continued to be pronounced, *s* was reestablished in the literary language and in official inscriptions of the 2nd century B.C.E. In contrast, this *s* has always been preserved after a long vowel.

Cornelio (CIL I², 8) = *Cornelius*
Furio = *Furius*
tribunos militare (CIL I², 48 et 49) = *tribunus militaris*
rege Mitredatis (CIL I², 1334) = *regis Mit(h)ridatis*
corpu(s) meum (Enn. *Ann.* 38 Vahl.)
uisu(s) sum (Plaut. *Merc.* 232, 245)
satiu(s) fert (Ter. *Ad.* 839)

Final *d*, already a weak consonant, disappeared after a long vowel in the ablative singular of all five declensions, and after a future imperative in the 2nd and the 3rd person singular as well as in the 3rd plural.

praeda (abl.) < **praidad* (CIL I², 48)

me < **med* (CIL I², 4)

stato < **statod* (CIL I², 4)

dato (3ʳᵈ person singular of the imperative future of *dare*) <
*datod (CIL I², 366)

sunto (3ʳᵈ person plural of the imperative future of esse) <
*suntod

However, final *d* was preserved in words such as *ad*, *sed*, *quod*,
quid, *aliud*, *istud*, *aliquid*, *id*, and *illud*, in all of which *d* was preceded
by a short vowel.

Remark

The negation *haud*, in which the diphthong was equal to a long
vowel, preserved *d* when the following word began with a vowel,
because *haud*, as a proclitic, formed a unit with the following word
(*haud iter*). In contrast, *d* before a consonant mostly disappeared by
assimilation (ex. *haud multum* > *hau(m) multum*, *haud proclum* > *hau(p)
proclum*).

The labial nasal *m*, fairly weak by itself, tended to disappear in
final position, although once again it was maintained in literary lan-
guage.

Scipione (CIL I², 9) for *Scipionem*

Taurasia, *Samnio* (CIL I², 7) for *Taurasiam*, *Samnium*

Dental nasal *n*, much weaker than the labial nasal, always dis-
appeared in nominatives ending in **-*on**.

homo < **homon*

We should note the preservation of the dental nasal *n* at the
end of words after a short vowel (*certamen* 'a contest', *carmen* 'song,
tune' etc.), and, in certain words, after a long.

In final position, the clusters -*qu*, -*nd*, -*rd*, and -*ct* simplified
to -*c*, -*n*, -*r*, and -*c* respectively due to their frequent contact with
subsequent words that had an initial consonant.

nec, *ac*, *nequ(e), atqu(e)*

dein < *deind(e)*, *proin* < *proind(e)*

cor 'heart' < **cord* (cf. gen. *cordis*)
lac 'milk' < **lact(e)*

Remark

In epigraphical texts, the cluster -*nt* became simple -*n* (*coraueron*, CIL I², 59 = *curauerunt*), but, in the literary language, -*t* was reestablished by analogy with the 3rd person singular.

2. Shortening and simplification

Before a word with an initial consonant, final geminates generally become simple.

miles 'soldier' < **miless* < **milets*
anas 'duck' < **anass* < **anats*
compos 'having the mastery of' < **composs* < **compots*
dens 'tooth' < **denss* < **dents*
ferens < **ferenss* < **ferents*
sacer 'sacred, holy' < **sacerr* < **sakros* (CIL I², 1)
acer 'sharp, cutting' < **acerr* < **akros*
ter 'three times' < **terr*
far 'spelt' < **farr*
fel 'gall, bile' < **fell* (cf. gen. *fellis*)
es < **ess*
os 'bone' < **oss*

Long non-plosives, weak by position, were reduced to common consonants due to "muscular tension" which neglected the non-plosive and concentrated on the following plosive.

In contrast, long consonants became short in certain isolated words.

In polysyllables containing -*rr*, the reduction of the final consonant took place in the pre-literary period. Eventually, the reduction of final -*rr* and -*ll* occurred in monosyllables, as well as that of final -*ss* in polysyllables. The reduction of the final -*ss* in monosyllables was last to occur.

Remark

In Latin poetry, the geminate *c* of the nominative and accusative neuter *hocc* was long and therefore never simplified before a vowel (Virg. *Aen.* 2, 664; Hor. *Sat.* 2, 6, 1).

II.3.B. Qualitative changes

Final voiceless plosives generally were voiced after a vowel.

ab cf. Umbrian *ap*
ob cf. Umbrian *op*
sub cf. Umbrian *sup*
deded cf. *dedet*

The contrast between Latin *ab*, *ob*, *sub* and Oscan *ap*, *ap*, *sup* can be explained by the fact that these prepositions/prefixes were proclitics and therefore were in a close relationship with words that had with either a voiced or a voiceless initial consonant. In Latin, the voiced occlusive before a voiced consonant was generalized both *in pausa* and before a vowel. In contrast, the voicing of *-t* in *deded* is due to the weakening of the implosive consonant at the end of a polysyllable, which explains its resistance to the influence of the following voiced phoneme.

II.4. INITIAL CONSONANT CLUSTERS

The following initial clusters were simplified due to the weak position of the first consonant:

pt- in *t-*
tilia 'a lime-tree' < *ptilia*

dj- (sometimes) in *j-*
Iouis < *Diouis*

wr- in *r-*

radix 'root' < **wradix*

wl- in **l**-
lana 'wool' < **wlana*

(s)tl- in **l**-
lis 'a legal controversy, an action' < **slis* < **stlis* (Quint. I, 4, 16)
locus 'place' < **stlocus*

dm- in **m**-
materies 'matter, material' < **dma-*

gn- in **n**-
natus < **gnatus*
nosco 'get knowledge of' < **gnosco*

Remarks

1. In the group **sl**-, from **stl**-, **s** must have become voiced and then mute. However, the initial **stl**- was preserved as an archaizing feature in the epigraphical formula STL IVD = *stlitibus iudicandis* as well as in certain words (*stloppus* cf. *scloppus* 'the noise of a slap on the inflated cheeks', *stlatta* 'a kind of ship', *stlembus* 'grauis tardus'.

2. In the group **gn** the loss of **g** must have taken place during the 2nd century B.C.E. In fact, the initial **gn** still exists in Plautus and Terence in comparison to forms without **g**. However, **gn**- was preserved in proper nouns (*Gnaeus*), and by analogy in certain words (*gnarus* cf. *narus*, *gnauus* cf. *nauus* by analogy to *ignarus* 'ignorant of', *ignauus* 'idle, inactive').

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